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ABSTRACT

The 12 studies that constituted the 1971-1972 evaluation of the Let's Be Amigos program are presented together with the evaluation findings. The three components of the Bilingual Program, serving 1,813 students by the end of the third year, were the Model A program (prekindergarten to grade 3) with teams of English- and Spanish-speaking teachers working with the students; the Model B program (grades 1 and 2) in which teachers worked with students who were dominant in the teacher's mother tongue; and the ARRIBA program (elementary, junior high, and senior high schools) serving primarily Latino pupils who could benefit from instruction in their mother tongue. The evaluation studies were categorized as to Process Evaluation Studies (four studies) and Product Evaluation Studies (eight studies). The Process Evaluation Studies were: General Process Evaluation of the Third Year of the Bilingual Program; Perceptions of Prinicpals, Teachers, and Parents Regarding the Bilingual Program; Curriculum Development, Distribution, and Tryout in the ARRIBA Program; and Follow-up of Elementary-Level ARRIBA Pupils Who Moved into Regular English Language Classes. The Product Evaluation Studies were: Log of Pupil Performance in the Model A and Model B Programs; Criterion-Referent Testing of Second- and Third-Grade Arithmetic Skills in the Model School Program; Exploratory Testing of ARRIBA Junior High School Students; and Replication of Findings Assessing the ARRIBA Component's Impact on Elementary School Pupils' Attendance and High School Pupils' Dropout Rate. (DB)

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TITLE VII BILINGUAL PROJECT
LET'S BE AMIGOS
EVALUATION OF THE THIRD YEAR, 1971-1972

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SUMMARY OF THE "LET'S BE AMIGOS" PROJECT EVALUATION

The Program

By the end of the third operational year, the three components of the Bilingual Program were serving 1,813 students--937 in the Model A Bilingual School, 277 in the Model B Bilingual School programs, and 599 in ARRIBA programs. Of these students 1,005 were judged to be Spanish-speaking, 172 were judged to be speakers of both Spanish and English, and 527 were judged to be speakers of English. (Data are lacking for the remaining few students). The English-speaking pupils were virtually all participants in the Model A and Model B schools. ARRIBA students were nearly all Spanish-speaking.

The Model A program operated in the Potter-Thomas School pre-kindergarten to third grade, with teams of English- and Spanish-speaking teachers working with the pupils. In the earlier grade levels instruction was predominantly in the mother tongue. As pupils matured, increased contact with the second language was built into the program.

Three schools--Miller, Ludlow, and Bethune--had first and second grade classes which comprised the Model B component. The course of study was similar to that in Model A but the staffing pattern was different. English- and Spanish-speaking teachers worked with classes of pupils dominant in the teacher's mother tongue. Itinerant second-language specialists worked with the pupils in their specialties--English as a Second Language and Spanish as a Second Language.

Eight schools--two elementary, two junior high, and four senior high schools--comprised the ARRIBA program. This served primarily Latino pupils who could benefit from, or wanted instruction in, their mother tongue. At all levels courses were offered in Spanish as a First Language, English as a Second Language, Social Studies in Spanish, and Science in Spanish. The content of the courses varied with grade level and was (where possible) similar to the English-language program studied in the Philadelphia schools. At the elementary and junior high schools pupils served by the program took all courses offered for their grade levels. At the high school level pupils could select courses from among those offered by the program. In one high school, Kensington, some commercial courses in Spanish were added to the ARRIBA component during the 1971-1972 year.

Program Costs

Table 0.1 shows grant funds' expenditures per pupil and for each of the project components in the Let's Be Amigos project. Evaluation and audit costs were excluded since expenditures for these services would not be required if the program were not funded under ESEA Title VII. The direct expenditures at program sites were those expenditures which could be clearly assigned to various program components--mostly for supervision and faculty who taught and implemented the materials which had been developed for the program. The prorated costs are those project expenses which

TABLE 0.1

Expenditure of Grant Funds for Various Components of the Program for Services to Children, (Excluding the Costs of Evaluation and Audit)

Program	Direct Expenditures at Program Sites	Prorated Costs of Centralized Activities	Total*
Model A (937 pupils)			
Total	$163,861.43	$ 57,417.79	$221,279.22
Cost per pupil	174.88	61.28	236.16
Model B (277 pupils)			
Total	39,830.30	16,974.10	56,804.40
Cost per pupil	143.79	61.28	205.07
ARRIBA (599 pupils)			
Total	172,841.95	36,705.72	209,547.67
Cost per pupil	288.55	61.28	349.83
Entire Program (1813 pupils)			
Total	376,533.68	111,097.61	487,631.29
Cost per pupil	207.69	61.28	268.97

***Excluding evaluation and audit costs.**

could not easily be assigned to specific components. They included text purchases, curriculum-development activities, project management, and public relations activities. The variation in per-pupil cost among the three components is due primarily to the variation in proportion of teaching staff which was paid out of School District operating funds.

The 1970-1971 Evaluation reported that the overall cost from Title VII funds was $353.37 per pupil. This cost included about $13.00 per pupil for evaluation making the net cost per pupil about $340. During the 1971-1972 year, the operational cost from Title VII (exclusive of evaluation) was $269. This is a reduction of 21%. This cost reduction was brought about by vertical expansion of the Model A and Model B programs, and increase in the number of pupils served in the ARRIBA component, expansion which was paid for primarily with School District operating funds.

Summary of This Report

Major Findings

The major findings of the twelve studies which constitute the 1971-1972 evaluation report show that the program was operating within the guidelines proposed for it, and, with some exceptions, achieving its major aims.

Process Evaluation Studies

Study 1 showed that groups made up of students from different grade levels in the Model A program were established to accomodate pupils entering in the second grades without prior bilingual experience. It also reported that the Model B component, at the three schools in which it was operational, was in closer conformity to the guidelines than it had been in past years. The ARRIBA program expanded, with increased service at the high school level as the major change: teaching staff and pupil participants increased at the high school level, and one school developed a selection of Spanish-language commercial subjects.

Study 2 reported that principals, teachers, and parents were supportive of the program. Eighty percent of parents asked that their children be continued in the project. Principals' and teachers' concerns centered on supervision and the availability of curriculum materials.

Study 3 examined curriculum development and curriculum distribution in the ARRIBA component. Findings were that progress in curriculum preparation was continuing to be made. Suggestions for improving the distribution of materials were gathered.

Study 4 followed up ARRIBA elementary students who were transferred to regular English-language classes. Results showed that older Spanish-speaking pupils need several years of bilingual education before they are ready to participate fully in regular English-language classes.

Product Evaluation Studies

Study 5, Log of Pupil Performance in Models A and B, showed that pupils in the lower grades (prekindergarten, kindergarten, first grade) tended to meet project objectives by midyear. This suggests that these objectives could be upgraded to include more complex skills than they do now. In the upper grade levels pupils at midyear did not attain objectives, and there was little growth from midyear to year end. This suggests that teachers did not emphasize unmastered skills specified in the objectives during the latter half of the year. In Model B, there was generally more midyear-to-year-end growth than in Model A, suggesting that the problem may lie in Model A component management.

Study 6, examining prekindergarten pupils' mastery of reading and number-readiness skills, suggested that there was a pool of pupils with an adequate mastery of skills for an all-day kindergarten similar in size to the group in the program this year. The study also showed that reading-readiness skill items were mastered by more pupils than were number-readiness skill items.

Study 7 examined pupil performance on the Philadelphia Readiness Test. During the first year of operation, results were very good, with both groups exceeding the criteria of the program and Latino pupils tested in Spanish scoring higher than pupils in any other school. In the second operational year, Latino pupil performance had fallen below the objective-specified base lines. In 1971-1972 pupil performance on the Philadelphia Readiness Test rose close to the very high levels observed during the first operational year of the program.

Study 8 reported pupils' performance on standardized tests. The performance of second-grade Anglo pupils in the program was superior at a statistically significant level to that of a base-line group of similar pupils on three of the four subtests of the Stanford Primary Battery II that were administered--Paragraph Meaning, Spelling, and Word Study Skills. Performances of Anglo pupils on the Word Meaning subtest were examined separately, for each of the Model School components. It was found that gains on the test were greater in Model A than in Model B. The gains in Model B over the base line were less than one month of grade-equivalent score.

Third-grade Model A Anglos were examined on the Iowa Tests of Basic Skills. Comparison with the base line showed a statistically significant improvement in the Vocabulary subtest, marginally significant gains in Arithmetic and Language Skills, and a gain, not statistically significant, in Reading. The composite score showed an overall advance of 2.5 months of grade-equivalent score.

Examination of second-and third-grade Latinos on the Spanish reading test, Test De Destrezas Básicas En Lectura, showed strong, statistically significant gains over preprogram base lines--13 percentile points in the second grade, and 17 percentile points in the third grade. Models A and B were about equally effective in teaching the reading skills. In the third grade, there was a trend (not statistically significant by the method of analysis used) for pupils who were in the bilingual program longer to earn higher scores than newly admitted pupils in the same grade level.

Testing of third-grade Latino pupils, most of whom had received English reading instruction for about one year, showed that they read English at about the level of English-speaking pupils in a national sample at the end of first grade.

Study 9 discusses performance on criterion-referent reading tests of first-grade pupils in their first language, second-grade Latinos in their second language (English), and third-grade Anglos in their second language (Spanish). Results showed that at most levels of the program fewer pupils could call words at levels specified in the objectives than had been anticipated in the proposal.

Study 10 examined Model A and B second- and third-grade pupil performance on project-developed criterion-referent arithmetic tests. Results showed that pupil performance was similiar to that expected, with substantial numbers of pupils performing higher than project planners had anticipated in writing the objectives. There were also a few pupils who were below minimum levels of performance specified by the project planners.

Study 11 examined performance of junior high school ARRIBA pupils on standardized tests--the Inter-American Reading-Test in Spanish and the Iowa Test of Basic Skills in English. Seventh- and eighth-grade pupil performance on the Inter-American test showed significant gains over performance of similar pupils enrolled in the same grade levels prior to the initiation of the ARRIBA component in the schools.

Administration of various levels of the Iowa Tests of Basic Skills showed that none of the levels in the battery is likely to be a suitable tool for evaluating emerging English skills of pupil participants.

Study 12 replicated the finding of the 1970-1971 report that the high school level of the ARRIBA program is effective in reducing the number of high school dropouts. This study also attempted to replicate the 1970-1971 finding that attendance of program participants at the upper elementary grade levels was improved significantly by participation in the ARRIBA program. Results showed that there was a trend for attendance to be improved, but it was not large enough to be statistically significant.

Evaluation reports of the two previous years showed that grades and behavior ratings earned in the ARRIBA program were significantly above those of pupils before the program. This result was not chosen for replication in 1971-1972 because of the high probability that the outcome would remain the same.

Previous years' evaluations in the Model Schools have shown that Model A pupils master writing at the levels anticipated by project staff and that teachers rate pupils' classroom behavior in the normal ranges, but that teachers of each ethnic group report more "adaptive" classroom behavior in their rooms from pupils who share the language dominance of the teacher. The first year's evaluation also showed that pupils in the Bilingual Program had greater mastery of their first and second languages than had control pupils.

Discussion and Conclusions

Overall, this evaluation suggested that all three components of the program are conceptually sound. The major area needing attention appears to be program management, especially coordination of materials development, instruction, and supervision with one another and with project goals.

The relative merits of Model A and Model B did not emerge clearly. Rather, pupil performance varied in different areas and skills, with the variation as much attributable to difference in teachers and supervision as to the properties of the program itself.

The evolution of the evaluation of the program from predominantly criterion-referent, formative approaches to increasingly summative approaches shows that, although the program has not met all the expectations of the persons who wrote its proposals, it has improved performances beyond those of base line groups in most critical areas.

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STUDY 1. GENERAL PROCESS EVALUATION OF THE THIRD YEAR OF THE BILINGUAL PROGRAM

During the first two years of the Let's Be Amigos Program, process evaluation consisted of examining, on a one-by-one basis, the successes of program management in implementing the enabling objectives and supportive procedures specified in the proposals of the project. Conclusions reached were that the program was operated in a manner consistent with the objectives specified in the proposals, with a few exceptions: changes were deliberately made in the materials used for instruction in second-grade classes; there were problems in implementing Model B programs; and curriculum development was slower than anticipated, especially in the ARRIBA program, preventing implementation of some planned evaluation.

A number of changes have been made in the approach to process evaluation in 1971-1972. Some areas, such as curriculum development and use of new curricular materials in the ARRIBA program, have been handled in separate studies because of their critical importance, as have questions of importance to project management that were never written as process objectives or management goals.

Other areas, not warranting special data-collection procedures and analyses, are discussed in this study. Rather than focusing on each enabling objective and supportive procedure, this third year's report focuses on the areas where discrepancies--either improvements over the original plans or instances where improvements were needed--existed.

It should be noted that most monitoring data, results of the curriculum-development process, and detailed information regarding the population served were presented in the 1972-1973 Continuation Proposal.

Procedures

Program

Model A. The Model A program continued to operate at the Potter-Thomas School site, where it encompassed prekindergarten through third-grade classes, the last of these being new during the third operational year.

The Model A program plan was to team-teach, with Anglo teachers and Latino teachers (nearly all of whom had at least a working knowledge of both languages) teaching pairs of classes. Pupils in each pair of classes met in linguistically mixed or homogeneous groups, with most instruction in homogeneous, mother-tongue groups in the earlier grades, and greater amounts of second-language contact in homogeneous and ethnically mixed groups in the later grades.

During the typical school day, pupils moved between teachers in the team, assuring that each child had some experiences in his mother tongue and his second language, and in ethnically homogeneous and ethnically diverse groups. The curriculum specified materials to be used, global pupil-performance goals to be obtained, and microobjectives describing tasks that pupils should have been able to perform.

As the pupils progressed through the grades, their contact with the second language was to increase from ten percent of the school day at the beginning of the prekindergarten, kindergarten, and first grade. The prekindergarten and regular kindergarten levels of the program met for a half-day of school; the remainder were full day programs.

Beginning in second operational year, a special, all-day kindergarten program was developed, in which pupils began reading preprimer materials in their mother tongue. This plan was maintained in 1971-1972, and alumni of the 1970-1971 all-day kindergarten were enrolled in a special, enriched first-grade curriculum.

Model B. This program sought to bring a bilingual school experience to smaller groups of English- and Spanish-speaking pupils within a school which was not reorganized as a bilingual program. At each site, at least two classes in one grade level--one class consisting of Spanish-dominant children and one consisting of English-dominant children--participated in the program. Classes received second-language instruction (English as a Second Language or Spanish as a Second Language) from itinerant specialists in those subject areas. The classroom teachers had to be native speakers of the language in which they instructed the students. Anglo teachers of Anglo children did not need to be bilingual; Latino teachers of Latino children needed to have some use of English; and teachers of both English and Spanish as second languages needed to be bilingual. The two classes were supposed to conduct joint activities where possible.

The instructional objectives of the Model B program were identical with those of the Model A program.

ARRIBA. The ARRIBA program continued during the third operational year to offer grade-level-appropriate instruction using the Spanish language, in Science, Mathematics, Social Studies, and Spanish as a First Language. English as a Second Language also was provided for students at all sites, as in previous years.

Pupils in grades three to twelve were served, with the actual instructional format articulated to meet the demands of each instructional level. In the elementary school the program was operated in self-contained classrooms. In the junior high school, where pupils move from class to class for each subject, students were in Bilingual Program classes for part of the day and received instruction with Anglo classmates for the remainder. In the senior high school students had individual rosters, permitting the selection of courses from among those offered by the ARRIBA components.

Evaluation

This report is based on three sources: (a) monitoring data gathered by program supervisors; (*b*) follow-up of these data through discussions with the project director; and (*c*) information gathered informally during numerous visits to schools by the evaluation staff. Where data have been gathered to answer specific project-development problems, they have been prepared as separate studies.

Results and Discussion

Model A. During 1971-1972, this program served 937 children in grades from prekindergarten to three. As was reported in the Continuation Proposal for 1972-1973, monitoring and classroom observation showed that the teaching procedures used in the program were consistent with the methods and processes described in the enabling objectives and supportive procedures described in the proposal. There were, however, important modifications in the Model A program procedures which did not fit neatly into the objective framework.

The first of these was an accommodation within the program to meet the needs of pupils in the second and third grades transferred to the Potter-Thomas School without prior Bilingual Program experience. In the past, such children would have been assigned to a nonprogram class at the pupils' grade level at the school site. As the number of transfer pupils grew, it became clear that this could not be continued. As a result, a mixed-grade pool of pupils was formed in a large room accommodating four classes and a smaller adjacent room, to be taught by three Latino and two Anglo teachers. The classes taught by these five teachers were three third-grade classes, one second-grade class, and one mixed second-/third-grade class. Like the instructional pattern in the early grades and the other second grades, pupils were divided into linguistically homogeneous groups and moved among the teachers. But, in contrast to that pattern, children were grouped, not on the basis of their grade level, but on the teachers' judgments of pupil competence in the various curricular areas. This permitted the accommodation of pupils with varying amounts of experience in Spanish (whether as a first language or a second language) in groups of pupils with similar levels of skill. All of the competency-based instructional groups covered a similar range of materials so that it remained possible to evaluate the pupils according to their grade level as stipulated in the objectives and microobjectives. As a result, major revisions of the program objectives were not required by the changed organization of instructional groups.

The second area in which change occurred was the teaching of reading. During the second operational year, reading instruction of Anglo pupils was diffuse, with phonics-based instructional materials introduced in some Anglo classes and the project-staff-selected Bank Street text introduced in others. During the 1971-1972 school year, a uniform procedure was reinstated for reading instruction in the Anglo group. Except for the all-day-kindergarten, where the Chandler Preprimer reading series was used, the main reading text was the Bank Street series, with the Lippincott readers used as a supplement. The use of Lippincott as a supplement had not been specified by the program; however, the Bank Street series provided reading material for use only to the end of the third grade. Because a decision had been made to use Lippincott readers in the fourth grade in 1972-1973, when the program would reach that grade level, the use of Lippincott as a supplement assured a smooth transition from one reading series to the other.

The third area of modification of Model A processes was staff development. The program proposals specified that staff development would consist of programs and discussions with a variety of experts in the bilingual field, Hispano-American culture, and the curricular areas relevant to the Bilingual Program. During the course of the 1971-1972 school year only one such speaker was presented, and that at a workshop for school system people including those not a part of the Bilingual Program. According to supervisors, staff development during the year consisted primarily of meetings held to address specific problems: curriculum development and planning; coordination of team roles; development activities; and problems observed during the monitoring process. These meetings were held in alternate weeks throughout the school year. In addition, supervisors reported that separate Bilingual Program staff-development time was provided during most faculty meetings. The program supervisors were responsible for planning and chairing these supervisory meetings.

Model B. During 1971-1972, the Model B component served 277 children in grades one and two. Although similar to the plan described in the original 1970-1971 Continuation Proposal, it still encompassed a variety of teaching strategies and structures designed to permit the fitting of bilingual education into existing school structures.

At the McKinley site, it was impossible for project staff to come to agreement with the principal regarding the nature of bilingual education. The staff felt that Spanish, when it was the pupils' mother tongue, should be used for most of the instructional day in the early phases of the program; the principal felt that English and English as a Second Language ought to predominate. In October it was decided by mutual agreement of the principal and project staff to withdraw the program from that school.

At other sites, the structure of the program was modified to accommodate local needs and resource limitations. At Bethune School, one team consisting of a first-grade Anglo class and a first-grade Latino class was operated. Each was taught in all subject areas other than Second Language by a teacher who was a native speaker of the pupils' mother tongue. A Second Language specialist taught the Latino group English as a Second Language and the Anglo group Spanish as a Second Language. (During the remainder of the day, the specialist taught ESL to other children at the school.) Latino and Anglo classes reportedly held joint activities for half-hour sessions twice a week, but no record of observation of these activities appeared in the monitoring reports.

At Miller School, one class consisting of Latinos, mixed first and second graders, was operated. This was a self-contained class taught by a Latino teacher. An ESL specialist assigned to the school worked with the teacher providing English instruction for half the school day. This ESL specialist often worked by drawing out small groups of children with similar levels of skills.

At Ludlow the Model B program operated in four classes, Anglo and Latino first-grade groups and Anglo and Latino second-grade groups.

Each class was taught by a native speaker of the pupils' mother tongue. A Second Language specialist provided instruction in ESL and SSL for these classes. According to supervisors, the Anglo and Latino groups held joint activities "once in a while, not regularly." Examination of the monitoring forms shows that no joint activities were observed.

In the course of data gathering for other parts of this report, it was noted that the Anglo-Latino distinction does not apply consistently to the Ludlow class groups. Elsewhere in the Model School programs, the children were assigned to language groups on the basis of their language. Thus, pupils who grew up in households where Spanish was the main language were designated as Spanish-speaking (Spanish-surnamed children whose parents consistently used English in the home were, of course, treated as Anglos for most instructional purposes.)

In the Ludlow Model B program, however, it was found that the so-called Anglo groups contained children who came from Spanish-speaking families but knew enough English to get by in classes where English was used. This pattern is likely to have made Model B "Anglos" appear better in Spanish and poorer in English than a true Anglo group.

It should also be noted that at those schools where Anglo groups were operational, the instruction of these groups in English was not under direct project control. Rather, the English-language teacher provided instruction (in all areas but SSL) which was consistent with practices elsewhere in the school, but not with those of the Bilingual Program.

In addition to modifications in the organizational structure of the classes, the Model B program began serving as an experimental center for the tryout of new materials produced by the Miami Curriculum Development Center. As tryout centers, first-grade classes used materials in five areas: Language Arts (Spanish as a First Language), Spanish as a Second Language, Fine Arts, Social Studies, and Science/Math. First copies of these materials appear to have a substantial overlap with stated objectives and mixed objectives of the Bilingual Program. Therefore, no revisions in the objectives were made. Hard data describing teacher reactions to the materials and some assessments of student performance were collected by the Miami Curriculum Development Center. Results were to be, but have not yet been, shared with the project evaluator. Informal discussion with teachers and supervisors suggested that they felt the materials were satisfactory but too brief to constitute the major course of study in the areas written into them. Instead, they have been used in the main as a supplement to teacher-planned activities.

Staff development in the Model B program was similar to that of Model A, in that it focused on problems at each school site, discovered in the supervision process or brought to the supervisors by the teachers.

ARRIBA. The major change in this program was an expansion of the services provided to high school students. During the first operational year, ARRIBA served pupils in two elementary schools (Ludlow and Waring), two junior high schools (Stoddart-Fleisher and Penn Treaty), and two senior high schools (Edison and Kensington). In the second operational year two senior high schools, William Penn and Benjamin Franklin, were added to the program, with one pair of teachers sharing time between the schools.

During 1971-1972, the teaching force at these two high schools was expanded, so that each now has two bilingual faculty members. This school year also saw the beginning of development of a program of secretarial studies at Kensington High School. The courses offered were Clerical Practice and Typing. These classes were conducted in Spanish and aimed at producing skills in Spanish. (The students could also elect courses teaching these skills in English). According to the supervisor of the program, the typing course was conducted entirely in Spanish but the Clerical Practice course of study included use of a text in the English language.

At one senior high school (Penn), there was a disagreement with the principal regarding the amount of English contact students had. A compromise was worked out in which students who had good facility in the English language were encouraged to take more subjects in that language.

Staff development for the ARRIBA program was more formal than it had been in past years. According to information provided by the program supervisor, staff meetings were held on alternate weeks. Checks with the Curriculum Development Coordinator's office showed that they were held less often. According to the Coordinator's record there were only five during the year, (in October, November, December, January, and April). Major activities during these staff meetings followed two themes: (a) development of awareness of the problems of Puerto Ricans and other Spanish-speaking in the mainland schools, and (b) exploration of curriculum coordination skills. According to information provided by program supervisors, films were shown, materials were examined, and discussion groups were held. Videotapes of teachers in their classrooms were made and discussed in order to upgrade teaching skills. Dr. Krogh, project coordinator for curriculum development, coordinated most of these meetings.

Other Program Processes. A workshop in Puerto Rican History and Culture was held jointly with the Social Studies Department of the School District (Dr. French, Director) in May, 1972, in which high school teachers from all across the city participated. The program included an overview of the history of Puerto Rico, presented by Dr. Carrion, Professor of History at the University of Puerto Rico and former Undersecretary of State for Latin American Affairs. The program was sponsored by the B'nai Brith Anti-Defamation League, with whom project staff are developing high school social studies materials about Puerto Ricans. About 40 teachers attended this conference.

A Summer Teacher-Training Institute was held in 1971 to train Spanish-speaking persons as teachers, and provide them with emergency certificates. Twenty teachers, all native speakers of Spanish or from Spanish-speaking families, were enrolled and completed the program. All but two taught in the Philadelphia schools during the 1971-1972 school year.

Conclusions

This study suggests that the major modifications in the Bilingual Program have come about largely in response to changes in the environment in which the program operates. Those of Model A were due to shifts in the population of pupils being served, those of Model B were due to the need to fit the program into existing school structures, and those of ARRIBA were in response to student interest in commercial subjects and an increased demand for the program. Changes in these respects are to be anticipated as parts of the evolution of the program.

Admittedly, the program management has to focus on some complex problems which affect fundamental program processes. However, those problems were explored separately from this process evaluation and can be found in Studies 2 and 3.

Study 2. PERCEPTIONS OF PRINCIPALS, TEACHERS, AND PARENTS REGARDING THE BILINGUAL PROGRAM

During the first year of the Let's Be Amigos project's operation, principals were surveyed in order to assess their evaluations of program components operating in their schools. In the second operational year, surveys of parents and pupils served by the project were added to the survey of the principals.

For the third operational year, it was felt that two of the surveys should be replicated. The principal's survey needed replication because it assessed current status of the project. The parents' survey was replicated because the previous survey was not anonymous, i.e., parents were asked to indicate the name of their child in the program and questionnaires were returned to classroom teachers. It was felt that these features might bias results in favor of the program.

Overall results last year were generally complimentary to the program: most principals were satisfied with program operation, the only consistent problem being in the area of supervision of teachers; nearly all parent and most pupil reactions indicated a high degree of satisfaction. The principals' reports that there were problems in supervision suggested that teachers be polled in order to find out the kinds of supervision they were receiving. A questionnaire was then added for teachers to indicate their own feelings about supervision. The teacher questionnaire also provided opportunity for the project administration to gather data about curriculum materials being used and curriculum materials that teachers wanted but did not have.

Procedures

Principals' Survey

This survey was a replication of the data-gathering process used during the second year of operation.

Instrument. The principals' questionnaire appeared on page 219 of the Second Year Evaluation Report (Offenberg, 1972). It asked principals to give their overall impressions of the program and asked for specific information about pupil, parent, and teacher reactions to the program, about supervision, and about the performance of teachers in the program. The instrument provided opportunity for the responding principal to qualify or comment on the ratings he gave.

Method. A copy of the instrument was mailed in March to principals in whose school a program component was operational. Telephone follow-up assured that each principal returned a questionnaire. All were mailed to the project evaluator. The cover letter assured that individual respondents would not be identified in any reports or to other project personnel.

Subjects. All principals whose schools were served by the project were included in the study.

Analysis. The principal's ratings were tabulated and percentages computed. Responses to open-ended questions were tabulated.

Teachers' Survey

Instrument. The teachers' questionnaire, shown in Appendix 2.1, had two parts. The first part was designed to survey the materials teachers were using and the materials that teachers wished to have. This part of the questionnaire required that the teacher be identified. The second part of the questionnaire, which was designed to assess the strengths and weakness in the supervision process, was anonymous.

Method. All teachers who attended a staff meeting in February, 1972, were given copies of the questionnaire to complete. Teachers who were not in attendance were mailed questionnaires. The questionnaires were accompanied by envelopes which the respondents could use to return separately the signed and the anonymous questionnaire sections.

Subjects. All teachers working in any of the three instructional components of the program were surveyed.

Analysis. Results were tabulated and percentages computed where appropriate.

Parents' Survey

This survey was a modification of one conducted in 1970-1971, the second year of program operation. The content of the survey was similar to that of the previous survey, but the data-collection procedure was modified to increase the anonymity of the respondents.

Instruments. The questionnaire was prepared in two versions--one English, one Spanish. They are shown in Appendix 2.2. The items in both are nearly identical, the variations being permitted to assure that both versions included idiomatic statements in their respective languages. The questionnaire was designed to tap in a very simple way the parents' perceptions of the program, whether they had contact with the project through parent activities. The modification in the questionnaire was a revision of two items which not only asked parents to indicate their knowledge of the program aims, but also permitted them to indicate their satisfaction with their children's progress toward those aims.

Method. Each teacher in the program was supplied with enough questionnaires, cover letters, and stamped return envelopes for his pupils. During the third week of March, follow-up showed that all teachers had distributed the materials to their classes and provided appropriate instructions: parents were to complete the questionnaire, using the language of their preference, and mail it to the program-evaluation staff. The cover letter and the teachers both made it clear that parents and pupils were not to identify themselves.

Subjects. Teachers were asked to see that all pupils who were in attendance during the two or three days following the distribution of the questionnaires received them, however, they were not asked to keep a specific record. It was not therefore not possible to know exactly how many pupils received questionnaires. The percentage of questionnaires returned, based on the number of pupils on roll in the program, was computed and appears in the Results section of this report.

Analysis. Results were tabulated by program and school level (elementary, junior high, senior high school). Numbers and percentages of each of the responses to the questions were tabulated, as was the percentage of the pupil population for whom questionnaires were returned.

Results

Principals' Survey

All 11 principals of schools with bilingual programs funded through Title VII responded to the questionnaire.

The first question on this instrument asked principals to indicate their overall level of satisfaction with the bilingual program components operating in their schools. Two principals reported they were "very satisfied," eight stated that they were "somewhat satisfied," and one stated that he was "somewhat dissatisfied." No one was "very dissatisfied." Of the two principals who were "very satisfied," one, the principal of an ARRIBA junior high school, said that there was need for more interaction of program teachers with non-Spanish-speaking children. Five of the eight "somewhat satisfied" principals commented. Two (one of a Model B school and one of an ARRIBA program school) felt that more supervision was needed from the central staff. Two others (one of a Model B school and one of an ARRIBA school) felt that the program for English-speaking pupils needed improvement. Another principal felt a need for more emphasis on speaking and reading English (ARRIBA). The one principal who was "somewhat dissatisfied" focused on curriculum materials. He felt that there were inadequate materials in social studies, Spanish as a First Language, and mathematics. He also said that English-as-a-Second-Language materials, while good, were in insufficient quantities (ARRIBA).

Question 2 asked principals about expanding the program in their schools. Seven of the 11 respondents wanted expansion, three felt the program in their school should be kept the same size, and one felt the scope of the program should be reduced. No one indicated that the program should be stopped in their school. Three of the principals requesting expansion of the program commented on their answers. Two cited the increasing size of the Spanish-speaking population in their schools (Model B and ARRIBA). One also noted that an on-site supervisor was desirable (ARRIBA). One principal indicated that addition of another bilingual teacher to his staff in order to provide smaller classes for "intensive assistance in language development" would be disirable (ARRIBA). The principal who wished to have the program reduced stated that he felt the classes for English-speaking pupils should be dropped, but the program for Spanish-speaking should be expanded (Model B).

Question 3 asked principals who wished to have the program expanded whether more teachers with the background and the training of the summer institutes would be good additions to the staffs (see appendix 2.3 for information about summer institute). All seven principals desiring expansion answered affirmatively. The principal who asked that the program be reduced through the dropping of the English language component of Model B also indicated he would like additional institute-trained Spanish-speaking personnel. Two principals commented on their answers (other than to indicate how many teachers would be required). One stated that he wished the teachers had better fluency in English, and one said that he wished the teachers were more oriented to the local school system, classroom management, instructional techniques, school organization, and curriculum-development procedures.

Question 4 asked principals to rate the supervision received by teachers at the schools. One high school principal failed to answer the question, stating that the terminology needed clarification. One principal thought it was excellent (Model A); four (three ARRIBA and one Model B) thought it was good; and five thought it was fair (three schools having ARRIBA components and one school with both ARRIBA and Model B). None felt that it was poor. Four principals, all rating the supervision as "fair," wrote comments. Two felt that the amount of supervision was insufficient, one principal asking for concentrated blocks of time rather than "the hello-and-goodbye technique" (Model B); the other pointed to the great need for assistance of most of his teachers (ARRIBA). One principal (ARRIBA) said that supervision needed to be more structured and content oriented. One principal (ARRIBA) indicated that his school needed an on-site supervisor recognized by students as part of the regular school administration.

Question 5 asked principals to suggest areas where the summer institute's training of teachers could be improved. Two principals omitted this question. Of the remainder, six made suggestions. Two emphasized bilingualism, stating that the training ought to produce a greater commitment to all children and provide equal emphasis for English and Spanish. Development of activities and materials for students, teaching of reading, involvement of principals as participants and group teachers, and managing classrooms were emphasized by the other principals.

Question 6 asked principals to indicate whether there was increased understanding of the program goals this year (as compared to last year) by parents, students, and faculty. Seven of the nine principals who responded about parent understanding indicated that there had been gains. Nine of eleven respondents felt there had been gains in students' understanding. Ten of eleven respondents felt there had been gains on the part of faculty.

One principal (ARRIBA) commented that there had been an increase in the number of parents coming to the school. Another (ARRIBA) who indicated that there had been gains for all groups felt that more dissemination of information was still possible. A third principal felt that goals of the program should be distributed at the beginning of the year, and that the evaluative program should be designed in relationship to these goals. A fourth principal who felt that there were no gains for any groups wrote, "Some of the teachers have no idea of the goals and objectives of the program. Also, they are unsure of the timetable for the introduction of Spanish and English."

Question 7 asked principals to note other factors about the program which they wished to bring to the evaluator's attention. Three principals asked for greater articulation with the school staff and/or administration. One principal felt that a teacher at his school was anxious to put the Bilingual Program into an autonomous department which was contrary to school philosophy. One principal indicated that there was a need for a diversity of curriculum materials. The last principal indicated that the teachers were cooperative, mature, and dependable, but they needed appropriate textbooks.

The last section of the principals' questionnaire called for ratings of staff. The results overall showed that principals' views of teacher performance were favorable. As can be seen in Table 2.1, 91% of the ratings were excellent or good. The three areas where principals saw the most teachers as being fair or poor were relations with fellow teachers, preparation and organization of class materials, and class control. Even in those categories, the number of teachers rated fair or poor never exceeded 14% of the teaching staff.

Table 2.1 Summary of Principals' Rating of Teacher Performance, All Teachers' Groups and Components Combined.

Item	Excellent		Good		Fair		Poor	
	N	%	N	%	N	%	N	%
1. Rapport with students in his/her class.	36	58	22	35	1	2	3	5
2. Relationship with administrative personnel.	34	55	26	42	1	2	1	2
3. Knowledge of the subject taught.	26	41	36	56	1	2	1	2
4. Ability to relate to fellow teachers.	24	38	31	48	8	12	1	2
5. Preparation and organization of teaching materials and lessons.	30	47	27	42	6	9	1	2
6. Class control.	28	45	26	42	4	6	4	6
Total (N - 378)	178	47	168	44	21	6	11	3

Teachers' Survey

Part I of the teachers' questionnaire (which focused on supervision) was returned by 53 of the 63 teachers in the program (87%). The questionnaire asked teachers to provide information on their backgrounds and job roles as well as their perceptions of the supervisory process. Results are shown in Tables 2.2 through 2.4. Results for the first two questions (Table 2.2 and 2.3) were classified by the ethnic background of teachers. Among Spanish-speaking teachers, a substantial number of whom were teaching in the program for the first time during 1971-1972, responses were further divided into teachers who were new, and teachers who had at least one year's prior experience.

Results overall were similar for all three groups. Roughly half of the respondents reported that supervisors helped them with materials. About a quarter of the teachers stated that they received help in other school-related areas, especially teaching methods. Spanish-speaking teachers reported receiving this kind of help more than twice as often as English-speaking teachers. Slightly less than one quarter of the teachers responded that help was given providing information or orientation about the school or the program.

Attention must also be drawn to the 15% of the respondents (21% of them in the "New Spanish-speaking" category) who felt that little or no help had been received from supervisors. This result suggested that at least some teachers, especially inexperienced ones, may need additional attention from the supervisory staff.

The kinds of help desired, appearing in Table 2.3, parallel, to some extent, the kinds of help that the teachers reported the supervisors gave. The first four categories all focus on the distribution and use of teaching materials, with a general request for information about them appearing on 23% of the returned questionnaires (and on 47% of those of the new Spanish-speaking teachers). More specific curriculum-material requests appeared on from 2% to 9% of the remaining questionnaires. (The percentages cannot be added because some teachers appeared in more than one of the four categories). Other types of help discussed appeared relatively infrequently. They are shown on the remainder of the table. The last line of the table is a count of the number of teachers who wrote "None" or left the item blank, presumably indicating that there were no kinds of help they wanted but were not receiving. As can be seen, roughly one-third of the teachers (36%) were in this category, but the three respondent groups varied markedly: only half as many new spanish-speaking teachers left the item blank as had English-speaking and experienced Spanish-speaking teachers.

Only a small number (15) of the teachers used the last open-ended item to bring salient facts to the attention of the project administration. Their comments, organized by program component in Table 2.4, speak for themselves.

The second part of the teachers' survey asked teachers for the materials they had been using and the materials they wanted. This was designed primarily for project management, and was reported to the project director in March, 1972. The results were summarized in the 1972-1973 Continuation Proposal for the project. Since the survey, other materials were distributed and used by the project staff. As a result, the following count has been updated to

Table 2.2 Teachers' Responses to the Item, "List the ways the supervisors in the program have been helpful to you," as a function of teacher ethnic group and experience in the program.

Type of Help Received	Teachers Responding							
	Eng.-Speak. Tchr.[1]		Span.-Speak. Tchr.[2]				Total	
	New & Experienced (N=15)		New (N=19)		Experienced (N=19)		(N=53)	
	N	%	N	%	N	%	N	%
1. Provided or helped with books, materials, etc.	6	40	10	53	10	53	26	49
2. Provided personal or teaching methods in school related area.	2	13	6	31	6	31	14	26
3. Provided orientation and information.	3	20	3	16	6	31	12	22
4. Provided information about school rules, discipline.	0	0	2	11	1	5	3	6
5. Miscellaneous help provided.	1	7	1	5	1	5	3	6
6. "None," "in no way," or critical of help received.	2	13	2	11	4	21	8	15
7. No response to question.	2	13	4	21	1	5	7	13

[1] As only two responding English speaking teachers were without prior experience in the program, results for all English-speaking teachers are combined. All English-speaking teachers are part of Model A or B components.

[2] New teachers worked in the program during the year 1971-1972 for the first time. Virtually all new teachers had no prior experience in the Philadelphia schools.

Table 2.3 Teachers' Responses to the Item, "List the kinds of help you would like to receive from the supervisor of the program."

Type of Help Desired	Teachers Responding							
	English-Speaking		Spanish-Speaking				Total	
	New & Experienced		New & Experienced					
	(N=15)		(N=19)		(N=19)		N=53	
	N	%	N	%	N	%	N	%
Information about materials.	1	7	2	11	9	47	12	23
What material is available.	4	26	3	16	0	0	7	13
How to use materials.	2	13	3	16	0	0	5	9
Follow-up on requisition for materials.	1	7	0	0	0	0	1	2
Provide copies of objectives early in the year.	3	20	5	26	0	0	8	15
Improve supervision, criticism, more follow-up.	0	0	2	11	3	16	5	9
Revise curriculum.	0	0	1	5	2	11	3	6
Develop second-language instruction	3	20	0	0	1	5	4	8
Improve staff development.	1	7	2	11	1	5	4	8
Help with community activities.	0	0	1	5	1	5	2	4
Miscellaneous.	3	20	2	11	6	32	11	20
None or no response.	7	47	8	42	4	21	19	36

Table 2.4 Responses to the Questionnaire Item, "Use the space below to bring to the attention of the project staff anything else you wish."

Model A

- Would like opportunity to offer some ideas about the program and how I think we can improve it in some ways.
- Would like permission to observe classes locally and outside of Philadelphia.
- Would like to secure buses and tickets for student trips to events, museums, etc.

Model B

- Would like special help for some students in classroom.
- There are too many surveys, and not enough solutions to problems.
- Would like more curriculum materials relevant to Puerto Ricans on the mainland, not just material about Puerto Rico's culture.

ARRIBA

- Would like workbooks and exercises for books now in use (in the junior high school level).
- Would like more uniformity of materials in similar courses at various sites in the program (at the high school level).
- Coordinate rostering (at the junior high school level) to benefit pupils who need only half of their classes in Bilingual Program.
- Make appropriate classrooms for specialties (science, etc.) available to bilingual teachers at the high school level.
- Hold discussion groups of teachers throughout the program who teach the same subject areas.
- Develop a special student center, with information on Puerto Rico, a library, etc.
- Arrange demonstration classes with publishers to find out about new materials (like the workshop last spring for science kits).
- Third- and fourth-grade ARRIBA teachers would like to have an established curriculum for their grade level, and would work without pay to develop it.
- Would like closer contact (of project staff) with teachers.

TABLE 2.5, TABULATION OF THE RESULTS OF THE SURVEY OF PARENTS BY PROGRAM

Question	Model A $N_{Total}=261$		Model B $N_{Total}=91$		ARRIBA Elem. $N_{Total}=23$		ARRIBA Jr. H. $N_{Total}=58$		ARRIBA Sr. H. $N_{Total}=42$		Unidentified $N_{Total}=63$		TOTAL $N_{Total}=538$	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
Language Usage														
1. At home, I speak to my child**														
Always in Spanish	86	32%	46	50%	18	86%	50	88%	34	83%	37	66%	271	51%
Sometimes in Spanish	79	30%	31	34%	3	14%	7	12%	6	15%	17	30%	143	27%
Always in English	100	38%	15	16%	0	0	0	0	1	2%	2	4%	118	22%
2. At home my child speaks to me														
Always in Spanish	72	27%	38	41%	17	81%	48	83%	33	81%	32	56%	240	45%
Sometimes in Spanish	109	41%	41	44%	4	19%	10	17%	7	17%	23	40%	194	36%
Always in English	83	32%	14	15%	0		0	0	1	2%	2	4%	100	19%
3. At home my child speaks to others in the family														
Always in Spanish	61	24%	32	34%	16	76%	40	70%	24	59%	27	47%	200	38%
Sometimes in Spanish	112	43%	48	52%	5	24%	17	30%	17	41%	28	48%	227	43%
Always in English	86	33%	13	14%	0		0	0	0	0	3	5%	103	19%

*Percent of Parents answering the question.

**As the ARRIBA program serves port-of-entry pupils, virtually all parents of pupils in this program should report that they always or sometimes speak to their children in Spanish.

Question	Model A $N_{Total}=261$		Model B $N_{Total}=91$		ARRIBA Elem. $N_{Total}=23$		ARRIBA Jr. H. $N_{Total}=58$		ARRIBA Sr. H. $N_{Total}=42$		Unidentified $N_{Total}=63$		TOTAL $N_{Total}=538$	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
Perceptions of School Program														
4. Is your child studying English in school?														
No	32	12%	11	12%	3	14%	5	9%	3	7%	5	9%	59	11%
Yes	226	88%	79	88%	18	86%	53	91%	38	93%	49	91%	464	89%
If Yes, are you satisfied with the progress he is making in English?														
No	15	8%	5	8%	2	15%	4	9%	1	3%	1	3%	28	7%
Yes	172	92%	54	92%	11	85%	39	91%	32	97%	38	97%	347	93%
5. Is your child studying Spanish in school?														
No	18	7%	6	7%	4	21%	2	3%	14%	28%	2	4%	36	7%
Yes	245	93%	85	93%	15	79%	56	97%	36	72%	52	96%	489	93%
If Yes, are you satisfied with the progress he is making in Spanish?														
No	20	9%	2	3%	1	7%	2	4%	4	12%	0	0	29	7%
Yes	196	91%	68	97%	14	93%	45	96%	30	88%	45	100%	398	93%
6. Does your child like learning Spanish and English in school?														
No	20	8%	1	1%	0	0	2	3%	0	0	0	0	23	6%
Yes	243	92%	88	99%	20	100%	56	97%	41	100%	51	100%	505	94%

					ARRIBA									
	Model A $N_{Total}=261$		Model B $N_{Total}=91$		Elem. $N_{Total}=23$		Jr. H. $N_{Total}=58$		Sr. H. $N_{Total}=42$		Unidentified $N_{Total}=63$		TOTAL $N_{Total}=538$	
Question	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
Perceptions of School Program														
7. Do you like your child to be learning Spanish and English?														
No	14	5%	1	1%	0	0	1	2%	0	0	1	2%	17	3%
Yes	248	95%	87	99%	20	100%	55	98%	41	100%	56	98%	507	93%
8. Do you want your child to study two languages next year? (Spanish and English)														
No	19	7%	3	3%	0	0	1	2%	3	8%	4	7%	30	6%
Yes	242	33%	87	97%	18	100%	56	98%	37	92%	54	93%	504	94%
Parent Participation														
9. Have you visited your child's Spanish-speaking teacher this year?														
No	111	43%	31	35%	7	39%	24	43%	22	54%	23	41%	303	58%
Yes	150	57%	58	65%	11	61%	32	57%	19	46%	33	59%	219	42%
10. Have you visited your child's English-speaking teacher this year?														
No	109	43%	28	31%	13	62%	28	49%	23	56%	29	53%	289	56%
Yes	146	57%	62	69%	8	38%	29	51%	18	44%	26	47%	230	44%

Question	Model A $N_{Total=261}$		Model B $N_{Total=91}$		ARRIBA Elem. $N_{Total=23}$		ARRIBA Jr. H. $N_{Total=58}$		ARRIBA Sr. H. $N_{Total=42}$		Unidentified $N_{Total=63}$		TOTAL $N_{Total=538}$	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
Parent Participation														
11. Have you ever attended a meeting about your child's school program?														
No	122	47%	33	37%	10	50%	33	58%	18	44%	32	55%	278	53%
Yes	139	53%	56	63%	10	50%	24	42%	23	56%	26	45%	249	47%

TABLE 2.6, PARENTS RESPONSES TO QUESTIONNAIRES DIVIDED BY ETHNIC GROUP FOR THE MODEL SCHOOL COMPONENTS

Question:	MODEL A				MODEL B			
	^{N}Total=160 SPANISH-SPEAKING		^{N}Total=101 ENGLISH-SPEAKING		^{N}Total=74 SPANISH-SPEAKING		^{N}Total=17 ENGLISH-SPEAKING	
Perceptions of School Program	N	%	N	%	N	%	N	%
4. Is your child studying English in school?								
No	14	9	18	17	8	11	3	20
Yes	135	91	91	83	67	89	12	80
If yes , are you satisfied with the progress he is making in English?								
No	10	9	5	7	2	4	3	38
Yes	104	91	68	93	46	96	8	63
5. Is your child stud[illegible] Spanish in school?								
No	5	3	13	13	5	7	1	7
Yes	154	97	91	87	70	93	15	93
If yes , are you satisfied with the progress he is making in Spanish?								
No	10	8	10	12	1	2	1	7
Yes	123	92	73	88	54	98	14	93
6. Does your child like learning Spanish and English in school?								
No	1	1	19	18	0	-	1	7
Yes	156	99	87	82	73	100	15	93
7. Do you like your child to be learning Spanish and English?								
No	6	4	8	8	0	-		
Yes	151	96	95	92	72	100	1	

Question:	MODEL A				MODEL B			
	N_{Total}=160 SPANISH SPEAKING		N_{Total}=101 ENGLISH-SPEAKING		N_{Total}=74 SPANISH-SPEAKING		N_{Total}=17 ENGLISH-SPEAKING	
Perceptions of School Program	N	%	N	%	N	%	N	%
8. Do you want your child to study two languages next year? (Spanish and English)								
No	7	4	8	8	0	-	1	7
Yes	150	96	95	92	72	100	15	93
Parent Participation								
9. Have you visited your child' Spanish-speaking teacher this year?								
No	42	26	69	68	21	29	10	63
Yes	117	74	33	32	52	71	6	38
10. Have you visited your child's English-speaking teacher this year?								
No	68	44	41	40	26	35	2	13
Yes	85	56	61	60	48	65	14	88
11. Have you ever attended a meeting about your child's school program?								
No	67	43	55	52	28	38	5	31
Yes	88	57	51	48	45	62	11	69

include not only the information appearing on the questionnaires, but also information gathered in visiting classrooms.

The latest findings (May, 1972) show that 43 materials were completed and readied for distribution; of these, sixteen (39%) were actually in use. As a result of these findings, a separate assessment of curriculum distribution in the ARRIBA component was prepared. It appears as part of Study 3.

Parents' Survey

As of May, 1972, there were 1,813 students served by the bilingual program. It was estimated that when the parent questionnaires were sent out in March, there were about 1,700 pupils being served by the program. Of these, 538 (about 32%) returned questionnaires to the evaluation staff. As shown in Table 2.5, the amount of return varied by grade level with the lowest rate of returns from the high schools (14%). Among those parents who indicated the school and grade (permitting program identification) were approximately 29% of the Model A parents, 36% of the Model B parents, and 20% of the ARRIBA parents.

Table 2.5, also shows language-usage patterns. Results from Models A and B showed that, although about equal numbers of English- and Spanish-speaking pupils were enrolled in the components, Spanish-speaking parents were more likely to respond than were the English-speaking. As anticipated, virtually all ARRIBA program parents reported that they were Spanish-speaking or bilingual.

Questions 4 through 8 on the table assessed parent perceptions of the program in terms of their having basic information and their having favorable or unfavorable reactions to its operation. Results were very uniform for all the components of the project. Most parents responding (89% program wide) were aware that English was being taught in the program, and most (93%) were aware that Spanish was being studied in the program. Of those respondents who were aware of the use of each language, over 90% felt that their children were making satisfactory progress in the languages, and reported that they liked their children to study two languages and wished to have them continue to do so.

Questions 9 through 11 asked parents whether they had had contact with project teachers or other project personnel. Results showed that about half the responding parents in each component had contact with their child's English-speaking teacher, Spanish-speaking teacher, and/or the project staff through a meeting at the school.

Table 2.6 shows the responses of Model A and B parents who are English-speaking (who said they speak to their child only in English on Question 1) or Spanish-speaking (who reported that they speak to their child in Spanish and English). Spanish-speaking parents were more likely to respond than were English-speaking parents. The 160 Spanish-speaking Model A respondents were about 32% of the group; the 101 English-speaking Model A parents were about 24% of the group; the 74 Spanish-speaking Model B parents were 50% of the Model B group, the 17 English-speaking parents who responded were about 15% of those involved in that program.

Results for the parents who responded to the questionnaires in the two ethnic groups were quite similar in their liking of program. Over 90% liked their child to be learning two languages, and most (at least 80%) of each responding group wanted their children to continue doing so. There were some interesting differences in other areas between the two ethnic groups. While the great majority of Model A and Model B Latino parents were aware of the study of both English and Spanish in school, a surprising number of Anglo parents seemed confused. Seventeen percent of the responding English-speaking parents of Model A, and 20% of the (admittedly small) group of English-speaking parents of Model B, seemed to think their children were not studying English. In addition, 13% of the Anglo parents of Model A seemed unaware that their children were studying Spanish. A second interesting point is the relationship between the ethnic group of parents and the ethnic group of the teachers that parents have visited. While a majority of both Spanish-speaking and English-speaking parents reported visiting their child's English-speaking teacher, the English speaking parents said they visited the English-speaking teacher twice as often as they visited the Spanish-speaking teacher. There were no clear-cut differences between the groups regarding the frequency with which Spanish- and English-speaking parents visited the school for other meetings.

In addition to the choice-response items, parents were invited to make comments regarding the effectiveness of the program. Programwide comments are shown in Table 2.7. As can be seen, the Latino parents made comments twice as often as Anglo parents. Overall, the comments were highly complimentary to the program, with the number with expressions of agreement with the program exceeding all other categories combined. It should be noted, however, that among those Anglos who commented, about one in ten expressed disagreement with the program procedures or goals, but among Latino parents less than one in 50 expressed such disagreement.

Discussion

The outcomes of this assessment of principals', teachers', and parents' views of the program largely confirm the findings of last year's studies, that there is general satisfaction with the program, but room for improvement. School personnel, especially principals, continue to feel that improvement is needed in supervision and in areas tied to courses of study (statement of program objectives and materials distribution).

The number of returns on the parent questionnaire was approximately that predicted by the School District's Office of Adminsitrative and Survey Research for a mail questionnaire without any follow-up (the method used in

Table 2.7 Parents' Responses to the Item, "Please write any suggestions you have for the bilingual program."

Response	Percentage of Responses	
	Anglo (N=118)	Latino (N=420)
Express agreement with or praise of program.	21%	51%
Express disagreement with program.	3%	1%
Suggest minor improvements in the program (e.g., more homework, more conversational Spanish, etc).	5%	11%
Request more bilingual personnel, administrators, etc.	0%	3%
Miscellaneous reactions.	4%	1%
No response.	67%	34%
Total	100%	100%

the study). The relatively low rate of return of questionnaires from the high school level was also predicted by them because high school students are less likely than younger pupils to take the questionnaires home. This does not necessarily indicate limited parent interest.

The rate of return of questionnaires and the generally favorable reactions to the program recorded on them suggest that most parents are pleased with their children's experience with the project and do not (even with the great effort made to collect anonymous data) bring up critical points.

The results of questions about language usage in the home shows that the program components did, in fact, reach their target groups. Model A and B reached children of both Spanish and English speaking households, the ARRIBA program reached children of Spanish-speaking households.

The marked difference in the frequency with which Anglo and Latino parents reported having visited the teachers of the two ethnic backgrounds suggests that, while Spanish-speaking parents feel that both Spanish and English are important, the Anglo parents may either (a) feel very uncomfortable with the Spanish teachers or (b) feel that their child's study of Spanish is less important than his study of English. The relatively low return rate of questionnaires from the Anglo parents probably indicates that the second of these alternatives is the correct one.

The rather surprising fact that some parents, especially Anglos in Model A, think their child is not studying English, suggests that the effort to do the important job of communicating the goals of the program to parents might need improvement in the coming year.

Results of the survey of teachers showing that the project-developed curriculum materials were being used only partically is also cause for concern. Discussion with the project director when this finding became available has led to some follow-up (see Study 3) which will be useful in remediating the situation next year.

Appendix 2.1 Instrument Used To Survey The Bilingual Program Teachers

SCHOOL DISTRICT OF PHILADELPHIA

Teachers Survey
Title VII Bilingual Program
Let's Be Amigos

PART I

Date_______________________

1. Check the program in which you are teaching:
    - ☐ Elementary School Model A (Potter Thomas)
    - ☐ Elementary School Model B (Miller, Ludlow, Bethune) 1st and 2nd grade
    - ☐ Elementary School ARRIBA (Ludlow, Waring) 3, 4, 5 and 6 grade
    - ☐ Junior High School ARRIBA (Stoddart, Penn Treaty)
    - ☐ Senior High School, ARRIBA (Edison, Kensington, Franklin, Penn)

2. Check the one which applies to your teaching assignment.
    - ☐ I teach primarily in Spanish.
    - ☐ I teach primarily in English.
    - ☐ I teach both in English and Spanish.

3. Check the one which applies to you.
    - ☐ My mother tongue is English.
    - ☐ My mother tongue is Spanish.

4. Check here ☐ if this is your first year teaching in the bilingual programs.

5. Please list the ways in which supervisors of the program have been helpful to you.____
____
____
____
____

6. Please list the additional kinds of help you would like to receive from the supervisors of the program____
____
____
____
____

7. Use the space below to bring to the attention of the project staff anything else you wish.____
____
____
____
____

PART 2

Teacher Name____________________ Grade(s) Taught____________________

School____________________

1. In column A list each subject you teach.

In column B write down the materials, text-books, etc. which you are using, or plan to use for each subject you wrote in column A. Put the texts on the line beside the subject for which it is used. If you do not use any materials in a subject, write "None".

A	B

2. List by title and author any instructional materials which would be useful to you but which you do not now have.____________________

3. Are there any special projects in which you or your pupils are involved? Please list them.____________________

Prepared by the Office of Research
and Evaluation
January, 1972

Appendix 2.2 Questionnaire Sent To Parents of Bilingual Program Participants

THE SCHOOL DISTRICT OF PHILADELPHIA
BOARD OF EDUCATION
INSTRUCTIONAL SERVICES
PARKWAY AT TWENTY-FIRST STREET
PHILADELPHIA, PENNSYLVANIA 19103

MATTHEW W. COSTANZO
SUPERINTENDENT OF SCHOOLS

I. EZRA STAPLES
ASSOCIATE SUPERINTENDENT
INSTRUCTIONAL SERVICES

ELEANOR L. SANDSTROM
DIRECTOR OF FOREIGN LANGUAGES
448-3334, 3335

March 3, 1972

Dear parents:

We would appreciate your filling out the enclosed questionnaire concerning the Bilingual Program in which your child is enrolled.

You can mail the questionnaire in the enclosed envelope to Mr. Robert Offenberg, Office of Research and Evaluation. You do not have to use a stamp nor do you have to sign your name or your child's name.

This questionnaire should be mailed not later than April 3.

Thank you for your cooperation.

Sincerely,

Eleanor L. Sandstrom

ELEANOR L. SANDSTROM
Director of
Foreign Languages Office

ELS:rg

Encl.

THE SCHOOL DISTRICT OF PHILADELPHIA
BOARD OF EDUCATION
INSTRUCTIONAL SERVICES
PARKWAY AT TWENTY-FIRST STREET
PHILADELPHIA, PENNSYLVANIA 19103

MATTHEW W. COSTANZO
SUPERINTENDENT OF SCHOOLS

I. EZRA STAPLES
ASSOCIATE SUPERINTENDENT
INSTRUCTIONAL SERVICES

ELEANOR L. SANDSTROM
DIRECTOR OF FOREIGN LANGUAGES
448-3334, 3335

1 de marzo de 1972

Estimados padres:

Se les agradecerá tengan la bondad de llenar el cuestionario que acompaña a ésta, en relación con el Programa Bilingüe en que su hijo está matriculado en la escuela. Puede enviarlo por correo usando el sobre que se le incluye dirigido al Sr. Robert Offenberg de la Oficina de Investigación y Evaluación. No necesita ponerle sello. Tampoco tiene que firmarlo ni escribir el nombre de su hijo.

El cuestionario debe enviarse antes del día 3 de abril.

Muchas gracias por su cooperación y por su atención.

Sinceramente,

Eleanor L. Sandstrom

ELEANOR L. SANDSTROM
Directora
Programa Bilingüe

ELS:rg

Encl.

THE SCHOOL DISTRICT OF PHILADELPHIA

Office of Foreign Languages
Office of Research and Evaluation
LET'S BE AMIGOS

PARENT'S QUESTIONNAIRE - BILINGUAL PROGRAMS

chool ______________________________

lass ______________________________

. At home, I speak to my child:

_____always in Spanish.

(Check One) _____sometimes in Spanish, sometimes in English.

_____always in English.

. At home, my child speaks to me:

_____always in Spanish.

_____sometimes in Spanish, sometimes in English.

_____always in English.

At home, my child speaks to others in the family:

_____always in Spanish.

_____sometimes in Spanish, sometimes in English.

_____always in English.

Is your child studying English in school?

_____NO

_____YES. If YES, are you satisfied with the progress he is making in English?

_____NO

_____YES

Is your child studying Spanish in school?

_____NO

_____YES. If YES, are you satisfied with the progress he is making in Spanish?

_____NO

_____YES

THE SCHOOL DISTRICT OF PHILADELPHIA

Office of Foreign Languages
Office of Research and Evaluation

CUESTIONARIO PARA LOS PADRES SOBRE EL PROGRAMA BILINGÜE

Escuela____

Clase____

1. En el hogar, yo hablo a mi hijo(a):

(Marque una)

______ siempre en español.

______ algunas veces en español, algunas veces en inglés.

______ siempre en inglés.

2. En el hogar, mi hijo me habla:

______ siempre en español.

______ algunas veces en español, algunas veces en inglés.

______ siempre en inglés.

3. En el hogar, mi hijo les habla a otros miembros de la familia:

______ siempre en español.

______ algunas veces en español, algunas veces en inglés.

______ siempre en inglés.

4. ¿Aprende su hijo inglés en la escuela?

______ No.

______ SÍ. Si usted ha marcado $\boxed{\text{SÍ}}$, ¿está usted satisfecho con el progreso que hace su hijo en inglés?

_____ No.
_____ SÍ.

5. ¿Aprende su hijo español en la escuela?

______ No.

______ SÍ. Si usted ha marcado $\boxed{\text{SÍ}}$, ¿está usted satisfecho con el progreso que hace su hijo en español?

_____ No.
_____ SÍ.

6. Does your child like learning Spanish and English in school?

_____NO

_____YES

7. Do you like your child to be learning Spanish and English?

_____NO

_____YES

8. Do you want your child to study two languages next year? (Spanish and English)

_____NO

_____YES

9. Have you visited your child's Spanish-speaking teacher this year?

_____NO

_____YES

10. Have you visited your child's English-speaking teacher this year?

_____NO

_____YES

11. Have you ever attended a meeting about your child's school program?

_____NO

_____YES

12. Please write any suggestions you have for the bilingual program.

____

____

____

____

____

6. ¿Le gusta a su hijo aprender español e inglés en la escuela?

_____ No.

_____ Sí.

7. ¿Desea usted que su hijo aprenda español e inglés?

_____ No.

_____ Sí.

8. ¿Desea usted que su hijo estudie dos lenguas el año que viene?

_____ No.

_____ Sí.

9. ¿Ha visitado usted al maestro hispano de su hijo este año?

_____ No.

_____ Sí.

10. ¿Ha visitado usted los otros maestros de su hijo este año?

_____ No.

_____ Sí.

11. ¿Ha asistido usted a alguna reunión del programa de la escuela de su hijo?

_____ No.

_____ Sí.

12. Tenga la bondad de escribir cualquier sugerencia o recomendación que usted tenga sobre el programa bilingüe:

____

____

____

____

____

Appendix 2.3 Outcome of
1971 Bilingual Training Institute

Appendix 2.3 Outcomes of 1971 Bilingual Training Institute

During the summer of 1971 a training institute was held to prepare Spanish-speaking residents of the Philadelphia community to teach in the public schools. Thirty participants enrolled in the institute, two of whom failed to complete the program. Of the 28 who finished, 18 went on to teach in the Bilingual Program (one of whom resigned at midyear) and 10 taught in other city schools which required Spanish-speaking teachers.

The summer institute was funded by the Title V of the Educational Professional Development Act. Personnel who completed the program earned 12 college credits and were awarded emergency certification by the State of Pennsylvania, and accepted a commitment to continue their studies on a part-time basis.

STUDY 3. CURRICULUM DEVELOPMENT, DISTRIBUTION, AND TRYOUT IN THE ARRIBA PROGRAM

One of the most critical needs of the project has been curriculum materials for older Spanish-speaking pupils, pupils in the upper elementary, junior high, and senior high school levels of the ARRIBA component.

Objective 1.5 stated that programs for these levels would be reviewed and where necessary new materials would be developed. The continuation proposal for the third operational year stated that developed materials would be tried out and a study of pupil performance on them would be conducted.

During the school year it was necessary to modify these goals because distribution of materials was inconsistent and often done too late for the planned systematic tryout. The need for this study became most evident at midyear, when it was found that only a small portion of the curriculum materials which had been prepared were actually in use.

The evaluation staff and the project director then agreed to a a three-pronged evaluation in the curriculum area in order to gather data which would provide a clear assessment of the then current state of affairs and mitigate implementation problems:

1. A study of the teacher's view of the curriculum-distribution process was made in order to facilitate a systematic assessment of pupil performance next year.

2. Examination of newly developed curricular materials was undertaken to assess their quality.

3. A study of teachers' reactions to completed curriculum materials was undertaken to assess (a) the elements which went into teacher decisions whether to try a curriculum set or not, and (b) the teachers' views of ways the materials which had been tried could be improved.

Procedures

Program

Teams of two to four teachers who understand, read, write, and speak both Spanish and English fluently work under the direction of the curriculum coordinator. They adapt (into Spanish) curriculum materials in use throughout the school system or prepare new instructional materials for the program when needed. During the summer months teachers work on a full-time basis. During the school year, the curriculum coordinator supervises both the curriculum-development activities of teachers who prepare curriculum materials on a part-time basis and teach classes and the activities of the full-time curriculum development staff.

In addition to teacher-writers, the services of two media specialists and an illustrator have been used in the development process.

As materials are developed, they are to be made available to the teachers through the supervisor of the ARRIBA component, who is responsible for locating need for materials and planning a way of seeing that they are delivered to the schools.

Evaluation

Each of the three problems explored in this paper required a different evaluation approach.

Assessment of Teachers' Views of the Curriculum Development and Distribution Process.

This part of the study was conducted through the use of structured interviews. Teachers were visited at their schools by a bilingual member of the research staff. The teachers were asked to cite their impressions and problems in obtaining and using curricular materials developed for the program. When each teacher's commenting was completed, she was asked the specific questions shown on the interview format in Appendix 3.1, if she had not already provided an answer to them. After the interview, a summary of each teacher's comments was recorded on the interview sheet. It was orginally planned that a cross section of all ARRIBA teachers would be interviewed, but time pressures and highly consistent initial findings resulted in cutting this down to 12 teachers at six schools.

Curriculum-Development Coordinator's Review of New Materials

During the second year of operation, a curriculum-development checklist was prepared for assessing the degree to which developed materials met the curriculum coordinator's criteria for successful units. The current study applied the same methods to materials completed in the 1971-1972 fiscal year: the coordinator of curriculum development prepared a brief description of each set of materials prepared for the ARRIBA program, then rated them on each of the items on the curriculum development checklist.

Abstracts of the descriptions of the materials and the results of the checklist ratings were included in this part of the study.

Teacher's Evaluation of Materials Distributed.

The last part of the study was a second set of structured interviews. They were conducted in March and April of 1972, and were designed to assess (a) what went into a teacher's decision whether to use a set of materials, and (b) once a set of materials was tried, how successful the materials were in the classroom. The procedure was like that used to assess teacher views of curriculum development. A bilingual interviewer visited each teacher. He invited the teacher to discuss the materials freely, and then if the teacher had not commented on them, he asked about specific points of the structured interview format. Two different interview structures were used. The one shown in Appendix 3.2 was used for all but one set of materials. The interview format shown in Appendix 3.3 was used for evaluating junior high school "English as a Second Language" materials. A digest of the teachers' remarks was prepared from both interviews.

Results and Discussion

Teacher Views of Curriculum Development and Distribution Processes

It was orginally planned that a sample of two or three teachers would be interviewed at each site in the ARRIBA program in order to determine the amount of knowledge teachers had about the curriculum's development and to uncover ways in which the distribution process could be improved for the coming year. The information gathered in the first interviews of 12 teachers who taught at six schools in the ARRIBA component suggested that further interviewing would not produce new insights. As a result, the attempt to interview each teacher was discontinued and only four more teachers were seen to obtain data about specific curriculum materials that had been developed. These teachers were asked about curriculum development and distribution in an abbreviated interview.

The first questions about curriculum development and distribution (Items 3 and 4 on the interview format shown in Appendix 3.1) were designed to ascertain the actual ways in which teachers were obtaining curriculum materials. Teachers were asked how they obtained the curriculum materials that they were using. Responses to these questions showed that teachers in the ARRIBA program did not have a clear idea of where curriculum materials originate and how they can get materials most efficiently.

Nine of the 16 teachers interviewed were not aware of the existence and function of either the Curriculum Materials Center (at 219 North Broad Street) or the Media Center at the Potter-Thomas School. Three teachers clearly knew the function of these centers and the curriculum-development coordinator, and four knew the curriculum-development coordinator; however, six teachers thought that the major responsibility of the coordinator was the supervision of teachers.

Five of the 16 teachers reported that they requested materials from their supervisor but never received them. Five said they did not make any request, because they did not know what was available. Four teachers made requests and got the materials that they needed. The other two teachers apparently received all materials without initiating any requests. Six of the teachers said that they were to call the project director if they needed any materials. Only a third of the teachers making requests for materials asked their supervisor, the person who was the official channel for requests to obtain materials.

The interviews with teachers also suggested that materials distribution occurred too late in the school year. Regardless of whether materials were obtained through request initiated by the teachers or provided by the project staff without prior request, nine of the 16 teachers felt that materials were not delivered in time for their use to best advantage (most being delivered in November). Twelve teachers reported that too few copies of at least some materials were received for their needs.

Item 5 asked teachers how curriculum-materials distribution could be improved next year. Item 6 asked how the teaching of the materials could be organized so that a fair assessment of pupil performance in the appropriate areas could be made. (Responses to these two questions have been integrated here.) All interviewed teachers stated that they would like to have a list of all curriculum materials available, and directions for obtaining them, before the school year began. When questioned about how the books should be distributed, all respondents stated that they felt that the project staff should deliver materials to the schools because other non-project teachers are not required to go to curriculum centers or depots to obtain the materials. Some also said (incorrectly) that the curriculum centers were open only during the hours when school is in session.

Three-fourths of the respondents felt that before the school year began, a meeting should be held at which teachers could have contact with the coordinator of the curriculum center and subject specialists from outside the program.

When teachers were asked specifically about how the teaching could be organized to permit a test of pupil mastery of the content of project-developed curriculum units, the interviewer noted that teachers became more serious. Fourteen of the 16 teachers felt that a complete course outline and a primary text should be provided for each subject during the school year. These outlines should provide an indication of the testing schedule and the content of each examination. The remaining two teachers stated that they needed to know at least the content and date of the examinations. Teachers mentioned department heads, the central project administrative staff, and guidelines used in Puerto Rican schools as possible resources for developing these outlines.

When asked for any additional comments, all 12 teachers who were involved in the complete interview commented that there was, in their opinion, a need for improving contact and feedback with the central project administration and also a need for someone whose job was to physically distribute books and materials.

These data suggest that instruction in the ARRIBA component is loosely organized because the teachers, who do the instructing, were not clear about (a) the goals of the courses of study that they were teaching in each subject, (b) materials that they were to use, (c) the way to get materials, and (d) what to expect in terms of pupil performance.

It is not clear, at this point, how this situation developed. However, discussion with supervisors and the curriculum coordinator suggest that their roles and responsibilities are not clearly defined. It also appears that no one has a clear-cut responsibility and there is no definite procedure for the physical delivery of materials once they are requested. The data suggest that during the summer of 1972, courses of study should be delineated and a better materials-distribution system should be developed.

Curriculum Coordinator's Review of Newly Developed Materials

Information provided by the coordinator of curriculum development showed that there were seven new sets of curricular materials completed by the project staff for the ARRIBA component. Two of these, Reference List of Materials for Teaching English as a Second Language (for use at all grade levels) and Brief Chronology of Puerto Rican History (for use in the junior high schools) were designed for use of teachers, not pupils. They were excluded from formal evaluation because there were no stated criteria against which to evaluate them. The coordinator of curriculum development reviewed the remaining five against criteria developed during the second year of program operation. Of these five, three were new sets of Spanish-language science materials for the junior high schools: Astronomía (two booklets), Biología (one booklet), and Las Máquinas Simples (six booklets). English for Puerto Rican Students, a major revision of the "English as a Second Language" materials developed last year was also completed for use in high school classes in English as a Second Language. The last set of materials was a revision of the Muckley "Spanish as a First Language" units developed last year. They are now multimedia packets, partly tape-recorded, with accompanying teachers' guides. The titles of the five units are Recién Llegado, Paseando En Puerto Rico, Gigantes Borincanos, Una Carta, and Un Compromiso Formal.

Table 3.1 shows the summary of the ratings made for the coordinator of curriculum development on the criteria established last year for curriculum-unit evaluation. As shown in the table, all five sets of materials were rated appropriate for the intended grade levels and student backgrounds, had sufficient variety of activities, and made provision for pupils with different learning rates. Where it was relevant, the materials were found appropriate for students' previous knowledge in the subject area and were sequentially organized. As was the case last year, elements of curriculum design intended to enhance project accountability and uniformity of teaching procedures were likely to be the weak points in the products: four of the five lacked clear objectives and clear statements of intended pupil-performance outcomes, and two sets of materials lacked indication of pupil-evaluation procedures. Three of the same materials lacked a teacher guide; four did not indicate how necessary equipment could be obtained; and two did not include specifications of or ways to obtain, necessary aids or materials.

Taken together, these results suggest that, in the curriculum coordinator's view, the conceptualization of the curriculum materials for the ARRIBA component has been good, but the mechanisms for testing them and using them efficiently in the classroom are still not highly developed as they should be.

Table 3.1 Summary of supervisor's ratings, on project-developed criteria, of materials completed this year for five curricular units.*

Criterion	Number of Units Rated		
	Yes	No	Not Applicable
1. Appropriate for intended grade levels.	5	0	0
2. Appropriate for students' cultural background, interest level, and experiential field.	5	0	0
3. Appropriate for students' previous knowledge in the subject matter or field.	2	0	3
4. Specific objectives clearly stated.	1	4	0
5. Sequential organization and structure.	4	0	1
6. Observable performance outcomes stated.	1	4	0
7. Reasonable variety of learning activities.	5	0	0
8. Evaluation procedures included.	3	2	0
9. Provision for individual rate of learning included.	5	0	0
10. Teacher guide including suggested classroom procedures.	2	3	0
11. Availability of equipment.	1	4	0
12. Aids, materials needed to teach unit specified, and where obtainable.	1	2	2

---

*It should be noted that these materials were distributed systematically. Evaluation of them by teachers was undertaken. These teacher reactions appear in the next section of this paper.

Teacher Evaluation of Secondary-Level Curriculum Units Distributed in 1971-1972.

Regardless of how "good" a set of curriculum materials is from the point of view of pupil performance, it is necessary that curricular materials meet the test of teacher acceptance before they can be regarded as successful. To this end, interviews were conducted with teachers who tested packages of materials which became available for general distribution this year. During the 1971-1972 school year, six sets of Spanish-language materials in the areas of Spanish as a First Language, social studies, and science became available for trial. In addition, a year long oral-aural language course for beginning ESL pupils was completed and tried. After the teachers had an opportunity to begin to use these materials (March, 1972) the interviews were conducted, and the following condensations of the teachers' reactions were made.

Spanish as a First Language (Muckley) multi-media packets (Recién Llegado, Paseando en Puerto Rico, Gigantes Borincanas, Un Compromiso Formal, Una Carta) for Junior and Senior High School Pupils. Six teachers received packets of these materials from the Curriculum Center. Five of the teachers reported that they were using them at the time of the interview (March, 1972) in their "Spanish as a First Language" classes. One teacher stated that she was planning to begin to to use the materials in the spring, but had not yet done so because the tape-recorded dialogues which would accompany the written text were not received until January.

Of the five teachers who had received the materials packages, three had used the entire set: one used it exactly as published, and two reported making some adaptations. The remaining teachers said that they used only parts of the curriculum package: one did not use some parts because she felt there was an insufficient number of exercises, and one said that she had found more interesting activities which could be substituted for parts of the materials.

All responding teachers agreed that a major strength of these materials was their relevance to the experience of the target group--migrants from Puerto Rico. Cited were appropriateness of the material for the pupils who could identify with characters in the stories, high pupil motivation because of the wide variety of activities (taped dialogues, songs, etc.), and value for developing discussions because they compared the lives of Puerto Ricans on the island and on the mainland.

One teacher (at a junior high school) felt that the materials were too simple for most of her pupils, and that they could be made more challenging, especially in terms of vocabulary. Three teachers stated that there was no clear sequence to the materials, that they lacked continuity. One of these three teachers felt that the lack of continuity was especially a problem in the grammar work built into the units. One teacher felt that instructions to the teacher should be removed from the pupil copies of the materials. One teacher felt that the taped dialogues should be written out, and the pupils should be given copies. One teacher said that the exercises were too easy and failed to reinforce the grammer points raised in the text. One teacher said that she did not understand the purpose (teaching objectives) for which the materials had been prepared.

Puerto Rican History, for the upper elementary and junior high school levels. Two teachers were using these materials. One teacher at the upper elementary level used these materials as the primary source for teaching social studies. A second teacher, at the junior high school level, used them as a supplement. Both teachers reported using the entire text in the sequence that it appears in the materials.

Both teachers felt the materials were strong presentations, with a great amount of information about Puerto Rican history. One teacher felt that the chronological presentation was an advantage.

The teacher at the elementary level felt the vocabulary was too hard for the children in his class. He felt that the authors' explanations of some topics did not agree with those of other sources. He also felt that a package of supplementary pictures, maps, films, or slides would be useful. The junior high school teacher felt that the materials could be improved by including more discussion of important individuals in the history of Puerto Rico, and by including more about contemporary history. He noted that use of a Spanish-language newspaper, especially the Sunday edition of El Mundo, partially filled this gap. Both teachers noted typographical errors.

Brief Chronology of Puerto Rican History for upper elementary and junior high school levels (teacher's guide). At the time of the survey, one teacher at the junior high school level was using the Brief Chronology as a supplement to the project-developed text, Puerto Rican History. The responding teacher stated that the material would be improved if more attention were given to important personalities. Errors in spelling were found.

Simple Machines (Introduction and Booklets 1-5) for the junior high school. Three teachers received the Simple Machines science materials. Two teachers reported that they used them; the third stated that he did not teach science in the bilingual program, and that the shipment was an error.

Of the two teachers who used the materials, one reported that he used the entire package of six booklets with his ninth-grade class, the introduction and the first two booklets with his eighth-grade group, and the introduction alone with his seventh-grade class. The second teacher reported that the entire package of booklets was used with all his students in seventh, eighth and ninth grades. The first of these teachers stated that the booklets served as the only resource; the second teacher said that the pupils used the booklets but his own preparation was based on other resources.

Both teachers who tried the materials reacted favorably, one stating that there were, in his opinion, some weaknesses, but the materials were the best that were available to him. Both teachers felt that the materials were most suitable for ninth-grade pupils, and both agreed that the plan of publishing the materials in separate booklets was an advantage because that would permit pupils to work at their own pace and to evaluate themselves as they go. Both teachers felt that the texts were generally free of errors and ambiguous or misleading statements.

The teachers felt that the materials could be strengthened by the addition of more demonstrations of concepts, especially if the pupils could carry out or try these demonstrations themselves. At the same time the teachers noted that, because they have no laboratory space and no materials, the demonstrations which already appear in the text are hard to carry out.

These booklets were reviewed for content by the teachers and a member of the research staff who is a mechanical engineer. The latter's review contradicted the opinion of the teachers that the materials were error-free, noting that the authors were unclear in their attempts to make a distinction between weight and mass. In his opinion further editorial work was needed. Informal discussion between the research staff and the teachers suggested that the major problem--that there is no convenient way to carry out demonstrations--could be remedied by preparation of small, lightweight, portable sets of levers and pulleys designed to demonstrate the phenomena described in the course of study.

Mi Primero and Mi Segundo Libro de Astronomía for the junior high school level. This material was being used by one teacher at the junior high school level. Only the first book had been used (with seventh-grade pupils) at the time when the interview was conducted. The teacher did not have enough copies to use it with the eighth and ninth grades but felt it was suitable for those grade levels.

The teacher felt that the presentation of the materials was simple enough for pupils in the seventh grade. Other favorable reactions were that the pupils could work at their own pace or in groups, could conduct self-evaluations, and had an opportunity to read, write, and draw in the booklets. At the time of the interview, the teacher did not have enough information to comment on weaknesses, other than to note that there were some typographical errors.

Química, first unit of a series for the high school. According to the coordinator of curriculum development, these materials were intended to serve as the first part of a year-long program for the high schools. They have not yet been used in the high schools, but one teacher (the author of the series) tried this introductory chapter as an independent unit on the junior high school level. This teacher stated that he used these materials as a review resource, the material having already been presented from other sources. Because the teacher who conducted the field trial was the author, he refused to comment on his experience with the materials, other than to say he felt that the year-long program should be completed. Discussion with the coordinator of curriculum development revealed that he and some of the high school science teachers felt that the materials were too complex for the target group and needed to be simplified before wider distribution could be recommended.

English for Puerto Rican Students for the junior high school level. These materials were developed in the Bilingual Program for pupils at the junior high school level who were having their first formal instruction in English. However, they were distributed to both teachers in the program (three junior high school teachers and one high school teacher) and a few teachers (three elementary, two junior high, and one senior high) who had classes of English as a Second Language.

Of the ten teachers, five (two high school, two junior high, and one elementary) teachers reported that they had not used the material in any systematic way. The other five reported using the materials consistently with at least some pupils in their class, although all teachers supplemented English for Puerto Rican students with other materials.

Neither high school teacher reported more than a brief trial of the materials: one said that there was only one pupil at a beginning English level; the other felt that the materials were too elementary for her class.

One of the junior high school teachers conducted only a brief trial of the materials. He said that his pupils became bored with the large amount of repetition, but noted that his pupils did like the dialogues. A second junior high school teacher said that the materials were not suitable for her class, because the great amount of oral work prevented the class from being divided into simultaneously working, homogeneous groups. This teacher said that the materials would be useful for pupils with no English if they were in a separate class. The three remaining teachers at the junior high level reported that they could use the materials in combination with other texts in heterogeneous classes.

At the elementary level, the classes which used English for Puerto Rican Students were not part of the Bilingual Program, but were homogeneous classes designed for new immigrants. Their teachers reported that the materials were satisfactory (even for first-grade pupils, although they were not planned for use with this age level).

English for Puerto Rican Students has a unique set of symbols designed to give the teacher cues as to how the dialogues should be presented. A few of the responding teachers stated that the symbol system was annoying, but none said that the problem was serious enough to prevent use of the materials. When asked about the organization of the material, three teachers commented on its rigidity, i.e., that it prescribed too much of the teacher's behavior. One of the three noted, however, that this was a problem because of the heterogeneity of the classes with which she worked. Other teachers had no opinion or felt that the highly structured approach in these materials was an advantage.

All teachers felt that the presentations of pronunciation, grammar structures, vocabulary, and comprehension were good for beginning pupils. The word games were singled out by one teacher (at a junior high school) for special praise. One teacher noted that the pronunciation drills provided only minimum pairs. She felt that sentences and more complete utterances would be desirable additions.

One teacher noted that the pupils liked the use of Spanish names and the content about Puerto Rico. Most teachers at the secondary level indicated that the materials they used along with English for Puerto Rican Students compensated for its lack of reading and writing activities.

Overall, the interviews with teachers suggested that the usefulness of these materials depended heavily on two factors: the pupils exposed to the materials must be having their first contact with English instruction, and the class must be organized so the teacher can give a substantial block of her time to the pupils using the materials.

Conclusions

Taken together, the findings of these studies indicate that, while some criticism of each of the developed curriculum materials is possible, the major problem has been in the area of materials distribution. The suggestions gleaned from some of the teacher interviews regarding the prescription of materials to be studied by the pupils, preparation of course outlines, and improved supervision reflect major needs in the project. They must be fulfilled if the investment in curriculum development is to pay dividends.

Appendix 3.1 Structured Interview for Assessing Distribution of Project Developed Curriculum Units

LET'S BE AMIGOS

Title VII Bilingual Program

Research and Evaluation

Foreign Languages

Structured Interview of Teachers Using
Program Developed Units
Part I Curriculum Distribution

1. Identification:

School ______________________________

Teacher's Name ___________________________

Grade Level taught _______________ ______

Interviewer ______________________________

Date _________________________

2. Find out which project developed materials the teacher is using in each subject that he teaches.

Subject	Title	Author

3. Find out from whom the teacher got the materials.

Note: (If the teacher does not mention supervisor, the school itself and the curriculum center, ask specifically about them). ____________________

____

____

Note: (If it is not yet clear, find out whether the teacher knows about the Curriculum Development Center at 219 N. Broad, Richard Krough, and the Materials Center at Potter-Thomas). __________________________

____

____

4. Did the teacher request any materials? If so, what did they ask for, whom did they ask, and did they get them? ______________________

____

____

____

5. How can we improve the distribution of materials in general for next year?

____

____

6. Next year we would like to examine pupil performance on some of the materials which have been written for use in the project. How can we distribute those materials, and what kind of support can we give, to assure that they get a fair trial? ______________________________

____

____

7. Anything else about curriculum materials distribution, that we should know?

____

____

____

March, 1972
/dsb

Appendix 3.2 Structured Interview Format For Assessing Curriculum Units Tried by Teachers: General Form

LET'S BE AMIGOS

Title VII Bilingual Program

Structured Interview of Teachers Using
Program Developed Units
Part II Assessment of Units Examined and Tried

Units or Set of Units Being Reviewed:

____

1. Find out whether the teacher (a) only examined the materials, (b) tried the materials, but did not use them completely, (c) used the materials completely. ____________________

____

____

____

2. Find out what went into that decision to try or not try the materials. Probe for (a) elements of program management or supervision, (b) characteristics of the materials themselves, (c) elements of the classroom situation.

____

____

____

3. Find out with whom the materials were used.

Grade level ____________________

Age ____________________

Children's educational background ____________________

____

4. Based upon the teacher's experience, find out what is good about the materials. ____________________

____

____

5. Based on the teacher's experience, find out what needs to be improved.

____

____

6. Find out whether these materials were used as a main text or as a supplement and why. ____________________

____

7. If these materials are going to be revised next year, could the teacher think about any changes to improve them? Especially, ask for instances of misinformation, ambiguity, etc. ______________________________

____

____

____

8. If the teacher, after looking at the materials decided not to use them, find out reasons. ______________________________________

____

____

9. If teacher is not specific in answering question ~~14~~ 5, find out if it was either because of late delivery or because of properties of materials. If properties of materials, what were they? ______________________

____

____

10. What changes can the teacher suggest (either in the properties or distribution of these materials) that could make them more likely to be used next year? ____

____

____

____

____

11. Is there anything else about these materials that the staff for curriculum development and distribution should know? ____________________

____

____

____

March, 1972
/dsb

Appendix 3.3 Special Structured Interview for English for Puerto Rican Students Curriculum

LET'S BE AMIGOS

Title VII Bilingual Program

Research and Evaluation

Foreign Languages

Structured Interview of Teachers:
English for Puerto Rican Students

1. Identification - Teacher ____________________

   Grade levels taught ____________________

   Interviewer ____________________

2. Grade levels in which materials are actually in use:

   ____

   a. If the materials are in use in only some grade levels, find out why they are being used in some, but not in others:

   ____

   ____

   ____

   b. If the materials are not in use in any grade levels, find out why the teachers have not used them.

   ____

   ____

   ____

   c. If the teacher has not already expressed an opinion, find out how the materials relate to each of the following:

   (1) Amount of English pupils knew before the program began ____________

   ____

   (2) Age level of pupils ____________________

   ____

   (3) Grade levels of (e.g., sixth grade, seventh grade) the pupils

   ____

   ____

   (4) Presentation of materials in the book, especially the symbol system, materials or instructional aids needed ____________

   ____

(5) Organization of the activities into a highly structured course of study ______________________________

____

(6) The adequacy of the content and/or presentation of:

(a) Pronunciation ______________________________

(b) Grammatical Structures ______________________________

(c) Vocabulary ______________________________

(d) Comprehension of English Utterances ______________________________

____

3. If the teacher has used the materials find out if they were used as a supplement or as the main text. ______________________________

____

a. List any other materials the teacher used. Indicate which were used most of the time, and which were used occasionally.

____

____

____

b. Ask the teacher why these other materials were useful (or better) than English for Puerto Rican Students.

____

____

4. Ask the teacher how the English for Puerto Rican pupils materials can be improved, if they are re-edited or revised. ______________________________

____

____

____

____

STUDY 4. FOLLOW-UP OF ELEMENTARY-LEVEL "ARRIBA" PUPILS WHO MOVED INTO REGULAR ENGLISH-LANGUAGE CLASSES

During the third year of program operation, a discrepancy was uncovered between project policy and the intentions of some school personnel in the ARRIBA program. While central project administration felt that most pupils at the elementary grade levels needed to remain in the ARRIBA program for several years before they were ready to do well in regular English-speaking classrooms, some local school personnel felt that many pupils were ready to enter English-speaking classes after only a year in the ARRIBA program.

This study was undertaken to begin to assess the relative validity of the opinions expressed by the two groups within the project. As it was not included in the original evaluation plan, the study must be considered an informal assessment. For convenience, it was confined to two grade levels--pupils who were in the fifth and sixth grades in 1970-1971 and those who were now enrolled in the sixth and seventh grades.

Procedures

Subjects

At the end of the 1970-1971 school year, 21 pupils were enrolled in the fifth grade and 21 pupils were enrolled in the sixth grade of the ARRIBA program. These pupils were followed up for this study.

Procedure and Instrument

A structured interview format was developed. It is shown in Appendix 4.1. Current teachers of the pupils who had moved to regular Philadelphia classes were interviewed by a member of the research staff. Most interviews were by phone, although if it was convenient a face-to-face meeting was arranged. The procedure was to ask the teacher to discuss generally the performance of each pupil. The interviewer then continued with the specific items of the interview schedule if the teacher had not already provided clear information about the pupil in each area. The interviews were conducted in February and March, 1972.

Analysis

Results were tabulated and, where appropriate, percentages were computed. Frequently, the tabulation is based on a synthesis of the interviewees' responses to several questions. These syntheses were made by the interviewer.

Results

Results of the interviews with teachers who had Spanish-speaking pupils in their classes are summarized on Table 4.1. Of the 42 pupils who were in the project pupil file during 1970-1971, 13 could not be located during 1971-1972. The remaining 29 pupils were either in the Arriba program, in regular classes, or had been transferred out of the Philadelphia school system.

Table 4.1 Current Instruction of Pupils in ARRIBA 5th and 6th Grades During Fiscal 1970-1971. (All pupils had received one or two years of instruction in the Bilingual Program.)

Grade Level, 1970-1971	Pupils Still in ARRIBA		Pupils in Reg. Phila Classes		Pupils Transferred to other School Systems (Inc. P.R.)		No. Info.		Total	
	N	%	N	%	N	%	N	%	N	%
5	5	24	11	52	0	0	5	24	21	100
6	6	29	2	10	5	24	8	38	21	100
Total Pupils Located	11	38	13	45	5	17	--	--	29	100

Of the 29 pupils for whom data was obtainable, 38% continued in ARRIBA, 45% were in regular classes, and 17% (all of them sixth-grade pupils) either moved to Puerto Rico or entered parochial and other private schools. Follow-up was possible on 12 of the 16 pupils in regular classes of the Philadelphia school system (11 children) and the local parochial school system (one child).

Table 4.2 shows the project-evaluation staff's judgment of descriptions the teachers gave of pupils who came from the bilingual program to their classes. The classification was made on the basis of teachers answers to three questions: (a) "How well is this child doing in comparison to other children in the class?" (b) "Is the child's

Table 4.2 Teachers' General Impressions of the Pupils' Overall Performance: Pupils in Regular Classes of the Schools

	Doing Very Well	Doing Satisfactory Work	Evidencing Serious Problems	Total
N	1	6	5	12
%	8	50	42	100

English competence adequate for all subject areas?" and (*c*) "Are there any subjects where the child appears to have specific problems?" If the pupil's teacher reported outstanding work, or no weaknesses, he was classified as *doing very well*. If the pupil was described as typical, or doing satisfactory work with some weaknesses, he was put into the *generally* satisfactory category. If the teacher reported many problems or indicated that problems were, in her opinion, reflecting serious deficiences, the pupil was classified as evidencing serious problems. The results suggest that about half the pupils were seen as doing very well or doing satisfactory work, but 42% were seen as having clear problems. Table 4.3 has a list of the problems mentioned for the satisfactory and serious problems groups.

Table 4.3 Problems listed by teachers for pupils in their classes (N = 12 pupils), when compared to other pupils in their class.

Problem	Number of Pupils Mentioned		
	Excellent or Doing Satisfactory Work (N = 7)	Evidencing Severe Problems (N = 5)	Total (N = 12)
General Linguistic Problems			
Hard time expressing himself or understanding.	2	1	3
Problems in Pronunciation	1	-	1
Subject-Area Problems			
All/Most Subject Areas	3	2	5
Language Arts/ Reading	3	3	6
Social Studies	1	1	2
Mathematics	2	1	3
Emotional/Intelligence Problems			
Low I.Q./Slow	1	1	2
Shy, Introverted, Lacking Confidence	2	3	5
Miscellaneous (Family)			
Makes him babysit, resulting in much absence	-	1	1

These results, taken as a whole, point to language-based problems. While only 25% of the children were reported having problems in self-expression or understanding, teachers seem to be saying that the group is shy (41%) and having difficulties in reading and language arts (50%) or in all suject areas (41%). All of these can be symptoms arising from problems with the English language that teachers do not recognize as such.

Ten of the 12 teachers said they knew enough about the children in their classes to respond to the question, "Do you feel pupils would perform better in a bilingual class?" Five of the ten responding teachers felt that their pupils would do better in a bilingual class and gave specific reasons: it would provide opportunity for the child to strengthen his English competence, and it might help because the pupil was behind academically. The remaining five teachers felt that their pupils would not be better off in bilingual classes. Four stated that it would destroy pupils' self-confidence and therefore slow their academic progress. Two of these felt that some bilingual staff would be helpful in aiding the pupils in making the transition. One pupil was reported as performing adequately in her present class.

The last question asked for general comments. The one noteworthy comment was made by four of the 12 teachers (33%) who said that problems they observed or reported were probably due to readjustment from one type of class to another.

Discussion

The project management has long maintained that Spanish-dominant pupils need years of contact with bilingual programs before pupils are ready to enter English-language classrooms on an equal basis with Anglos. They believe that brief, one- or two-year contact with English as a Second Language or with Bilingual Education, while better than nothing, can not provide adequate English skills for non-English-speaking pupils to achieve well in classrooms geared for native English speakers. The data gathered in this study, while based on an informal method of collection and few cases, provide some relevant information. The results show that although at least half the teachers feel that pupils have adequate mastery of English to survive in their classes, they observe severe academic difficulties in (a) all subject areas or (b) language arts and reading, subject areas which are primarily dependent upon knowledge of language. Virtually all are seen as having some sort of handicap even though the base line for comparison is pupils in schools characterized by generally low achievement. These findings suggest that there may be discrepancy between the levels of the English-language competence which teachers feel is necessary for a Latino pupil to be placed in an English language classroom and the level of competence necessary for him to succeed in that classroom.

To the extent that the function of bilingual education is to maximize pupil performance in all academic areas while he is learning to work in English (and not to maximize English learning at the expense of everything else) these results suggest that extended contact with the Bilingual Program is desirable.

The results of the study, while clear, must be treated cautiously because of the informality of the evaluation design. However, it is apparent that enough evidence exists to warrent a more sophisticated, classically designed study with adequate controls.

Appendix 4.1 Interview Format For Interviewing Anglo Teachers Who Have Last Year's Program Participants in Their Classes

LET'S BE AMIGOS

Title VII Bilingual Program

Research and Evaluation

Foreign Languages

Interview for Teachers of Last Year's
ARRIBA 5th Graders

Name ______________________ Teacher ______________________

School ______________________ Grade & Class ______________________

1. Why is this child now in an English language classroom? Who made the decision to have the child placed in a regular class?

____

____

____

Note: If the child is repeating a grade, participating in a bilingual program of any sort, or if there is anything else unusual about his present assignment, jot down an explanation of what and why.

____

____

____

2. How well is this child doing in comparison to other pupils in the class? (English speaking pupils if he is in a class with English speakers).

____

____

3. Are there any subjects with which the child appears to be having specific problems? ______________________

____

____

4. Is this child's English competence adequate for all his subjects? If not, describe those aspects of his work where difficulties arise.

____

____

5. Do you think this child would perform better if he were in a bilingual program again? ______________________________

____

____

____

6. Any other comments or points ______________________________

____

____

____

March, 1972
/dsb

STUDY 5. LOG OF PUPIL PERFORMANCE IN THE MODEL A AND MODEL B PROGRAMS

Pupil-performance outcomes in the Model A and Model B components of the Let's Be Amigos program have been specified in two ways. All objectives were prepared in the form of comprehensive statements of pupil performance, and most objectives were also described in terms of microscopic bits of behavior, called microobjectives. This paper examines pupil performance on the microobjective level.

In past years, data on each microobjective and summaries for the objectives as wholes were presented. As the program continued to grow, the amount of information produced as microobjective data became overwhelming. To keep the microobjective study within reasonable limits in the third year of program evaluation, it was decided that for those parts of the program operational for at least one previous year, reporting would be limited to summary data (although the testing was still of individual microobjectives). More detailed presentation, including microobjective-by-microobjective analysis of outcomes, would be presented for the two new program levels of 1971-1972, the third grade and the special first grade. This special first grade accommodates the needs of pupils with prekindergarten and special all-day kindergarten program experience. The third grade was added as part of the planned upward cycling through the grades.

In addition, for the first time, sufficient control of the Model B Anglo program has been attained so that these pupils could be tested in their second tongue with the log instrument.

The following objectives specified that pupils would be able to carry out the indicated percentages of the microobjectives in the various skill areas:

Prekindergarten

1.1 Communications skills in the first language for prekindergarten (Spanish or English): 90%

1.2 Communication skills in the second language for prekindergarten: Latino children in English, 90%; Anglo children in Spanish, 80%.

1.3 Number concepts in the prekindergarten: Some skills were to be learned to a 90% criterion level, others to at least a 60% level.

1.4 Natural and biological phenomena for the prekindergarten: Sixty percent of the children would show at least 80% mastery, for performance of at least 48% overall.

Kindergarten

2.1 Communication skills in the first language in the kindergarten program (English or Spanish): 90%.

2.2 Communication skills in the second language in the kindergarten program: Latino children in English, 90%; Anglo children in Spanish, 80%.

2.3 Number concepts in the kindergarten: 90%.

2.4 Natural and biological phenomena in the kindergarten: 90%.

In addition to the regular kindergarten, an all-day kindergarten is operated in Model A. The objectives of this kindergarten program are similar to those of the other kindergartens, but are enriched with additional, more difficult microobjectives. In the Results section of this report these enriched objectives are designated with asterisks. The criteria are the same as for the parallel objectives in regular kindergarten classes.

First Grade

3.1 Communication skills in the first grade in the mother tongue (English or Spanish): 90%.

3.2 Communication skills in the first grade in the second language: Anglo pupils will show a 90% mastery level; Latino pupils will show an 80% mastery level.

3.3 Number concepts in the first grade: 90%.

3.4 Natural and biological phenomena in the first grade: 80%.

3.7 Reading and writing in the mother tongue: 90%.

In addition to the regular first grade, a special first-grade class for alumni of the all-day kindergarten was operated. These children were tested with an enriched set of microobjectives, indicated with asterisks in the Results section of this report. The expected levels of performance (criteria) are the same as the criteria for the regular first-grade classes.

Second Grade

5.1 Reading in the second grade in the mother tongue (English or Spanish): 90%.

5.2 Poetry in the first and second languages: 75%.

5.3 Writing in the first language: 85%.

5.4 Spanish as a second language (Anglos only): 80%.

5.5 English as a second language (Latinos only): 90%.

5.6 Social studies in the first language (English or Spanish): 90%.

5.7 Science in the first language: 90%.

5.8 Mathematics: 90%

Third Grade

6.1 Reading in the mother tongue (English or Spanish): 50% Level 3, Part 1; 80% Level 2; all pupils should be able to read Level 1. The criterion established was not more than four errors in 10 consecutive sentences.

6.2 Reading in the second language: Anglos (in Spanish), Level 1 40%, Primer 100%; Latinos (in English), Level 3, Part 1 10%, Level 2 50%, Level 1 100%. Criterion is not more than three errors in five consecutive sentences.

6.6 Spanish as a second language: 75%.

6.7 English as a second language: 75%

6.8 Social studies in first language: No criterion specified.

6.9 Social studies in second language: No criterion specified.

6.11 Arithmetic in first language: No criterion specified.

6.12 Arithmetic in second language: No criterion specified.

Procedures

Program

Teachers in the Model School programs were to treat the micro-objectives as a skeleton for their teaching which they fleshed out by developing daily lessons and activities. Supervisors observed the classrooms and reviewed the teachers' plans. This served to assure that teachers were including materials designed to lead to the Model School program objectives, and that good teaching practices were employed.

The general pattern was to teach concepts in the mother tongue. A select subgroup of topics was then retaught in the second language. Where appropriate, oral control of skills was developed before reading and writing were introduced. All teaching was by faculty who were native speakers of the target language.

In Model A, teaching responsibilities were shared by the teachers who formed teams. In Model B, second-language skills were taught by itinerant specialists. In Model A, and in Model B Latino classes, pupils were under project control. In Model B Anglo classes, only "Spanish as a Second Language" instruction was under direct control of the project staff.

Evaluation

Instrument. The log checklists used for prekindergarten through second grade during 1971-1972 were essentially the same as those used during the previous year, with one modification. Each log consisted of a list of grade-appropriate microobjectives which students were asked to carry out. Last year the students' success was recorded on "Digitek" sheets for machine processing. This year, responses were recorded on the log sheets themselves, and then were keypunched into cards.

Two new logs were prepared for 1971-1972, one for the special first-grade class added to the program and one for the new third-grade level. These logs are in Appendix 5.1, and can serve as models for the logs of other grade levels as well. In the third grade log one unique item tested reading. Rather than assessing individual unitary skills, this item asked pupils to read aloud from their reading text. Teachers were asked to skip ahead or backward in the text until a point was found where the pupil could read with no more than four mistakes in ten consecutive sentences in the first language and three mistakes in five sentences in the second language.

Subjects. A one-sixth sample (about five pupils) was drawn at random from the Anglo and Latino groups of pupils in each team's classes. All pupils were eligible to be drawn (including theose who teachers claimed were having extraordinary difficulties). However, if a pupil had been drawn with less than two months' experience in the program, he was replaced by another student.

Method

Virtually all pupils were tested by teachers who were part of the team with which they were working. A few pupils were tested by supervisors, when a teacher seemed to have difficulty in completing the task. Mother-tongue and second-language objectives were tested separately, by an adult who was a native speaker of the target language.

Pupils were tested individually. The testing was carried out twice--once in February and once in the last weeks of May and the first week of June.

A bilingual member of the research staff conducted a validity check, in which two pupils--one Anglo and one Latino--were drawn from each team's subjects and retested on five or six microobjectives. When conducting the validity check, this member of the research staff did not have any information regarding the performance of the pupil in the teacher's testing.

Analyses

For those grade levels which have been part of the program in previous years, the mean percentage of the microobjectives correct was computed:

$$\text{Mean Percentage Correct} = \frac{\sum Co}{M_o \cdot N}$$

where $\sum C_o$ is the sum of the number of correct responses that the tested pupils made to objective 0, M_o is the number of microobjectives in the objective, and N is the number of pupils tested.

Similar analysis was carried out for the objectives of the program's grade levels that were operational for the first time this year--special first grade and third grade. In addition, a graphic display of microobjective-by-microobjective performance was compiled for these two new groups.

Two objectives, first- and second-language reading in the third grade, were treated differently. The point in the reading series at which the pupils could read at the criterion is graphed. Pupils were asked to read the passage which the teacher felt was the most difficult the pupil had mastered. If the pupil had made fewer than the number of errors indicated in the criterion, the teacher moved ahead three pages, and read again. If the pupil had made too many errors, he moved back three pages. The process was repeated as many as four times until the pupil reached the criterion number of errors. If the criterion was not met in four trials, the pupil was assigned a score of pages above or below the last part of the text that was read in the last trial (depending on whether the reading level was better or poorer than that which had last been attempted).

Results

Prekindergarten

Results of the testing of Model A prekindergarten pupils are summarized in Table 5.1. Except for the areas of second language for Anglo and Latino pupils (Objective 1.2) and number concepts for Latino pupils (Objective 1.3) performance of pupils met or exceeded the year criteria at the first observation period. By year end, pupil performance exceeded the levels specified in the objectives in all areas. This suggests that review of the objectives and microobjectives of the prekindergarten component is warranted. With the exception of the second-language area, the course of study for the prekindergarten component might be enriched by introducing more complex skills.

Table 5.1. Mean Percentage of Model A Pupils Succeeding on the Microobjectives of the Prekindergarten Level.

	Objective	Anglo		Latino	
		Midyear N = 10	Year End N = 8	Midyear N = 7	Year End N = 12
1.1	Communication Skills, First Language (33 microobjectives) Criterion: 90%	94%*	90%*	92%*	94%*
1.2	Communication Skills, Second Language (17 microobjectives) Criterion: 80% Anglos, 90% Latinos	48%	59%	75%	87%
1.3	Number concepts (16 microobjectives) Criterion: 75%**	81%*	78%*	69%	88%*
1.4	Natural Phenonen (21 microobjectives) Criterion: 48%	62%*	73%*	85%*	92%*

*Performance at or above criterion.

**Nine microobjectives carried a criterion of 90%; seven had a criterion of 60%.

Regular Kindergarten

Results of sampling the regular kindergarten class performance of Model A pupils are shown in Table 5.2, where it can be seen that pupil performance was close to expected levels of performance at year end. With the exception of Anglo pupil performance in number concepts (Objective 2.3) performance was above or close to expected values. This is despite the fact that some of the most promising pupils--talented alumni of the previous year's prekindergarten--have been excluded from this group since the first year of program operation. There is, in fact, some evidence that the kindergarten program could be enriched in some areas. Comparison of the midyear and year-end results shows only tiny amounts of growth in communication skills in the first language (2.1) and natural phenomena (2.4) from the midyear observation to year end, suggesting that mastery of microobjectives in these areas requires less than one full year's work.

Table 5.2 Mean Percentage of Model A Pupils Succeeding on the Kindergarten Microobjectives

	Objective	Anglo		Latino	
		Midyear N = 10	Year End N = 8	Midyear N = 20	Year End N = 20
2.1	Communication Skills, First Language (37 microobjectives) Criterion: 90%	86	88	92*	96*
2.2	Communication Skills, Second Language (17 microobjectives) Criterion: 80% Anglos, 90% Latinos	65	81*	77	88
2.3	Number Concepts (14 microobjectives) Criterion: 90%	52	71	70	89
2.4	Natural Phenomena (16 microobjectives) Criterion: 90%	80	85	81	95*

*Meets or exceeds the year-end criterion for the objective.

All-Day Kindergarten

Early mastery of year-end objectives also characterized the all-day kindergarten class in the Model A component. Pupils enrolled in this class met for a full instructional day (in contrast to the half day of the regular program). These pupils were selected from among those who completed the prekindergarten program. The microobjectives of this level included some which normally were part of the first-grade curriculum and a greatly enriched set of skills in the second language. The results of the testing, shown in Table 5.3, show that despite this enrichment, the all-day kindergarten program is too simple for pupils enrolled in it in three of the four subject areas. In communication skills in the first and second languages (Objectives 2.1* and 2.2*) and number concepts (2.3*), pupil performance exceeded the year-end criterion by the middle of the school year. The fourth objective, natural phenomena (2.4), was not attained, and there was no clear progress from midyear to year end. (Not too much should be made of the small variations due to the small numbers of pupils observed).

Table 5.3 Mean Percentage of Model A Pupils Succeeding on the Objectives of the Special All-Day Kindergarten Program

Objective	Anglo Midyear N = 5	Anglo Year End N = 4	Latino Midyear N = 5	Latino Year End N = 6
2.1 Communication Skills, First Language (55 microobjectives) Criterion: 90%	99%**	99%**	97%**	98%**
2.2* Communication Skills Second Language (27 microobjectives) Criterion: Anglos 80% Latinos 90%	82%**	94%**	96%**	93%**
2.3* Number Concepts (14 microobjectives) Criterion: 90%	93%**	93%**	94%**	90%**
2.4* Natural Phenomena (19 microobjectives) Criterion: 90%	76%	79%	86%	74%

*Enriched objective

**Meets or exceeds the year criterion of the objective.

Regular First Grade

The first grade was the lowest grade level in which classes were conducted in both Model A and Model B programs. This fact is reflected in Table 5.4, which shows the performance of the Anglo and Latino groups in the two programs. The Anglo pupils in the Ludlow and Bethune Elementary Schools were tested on their skill in Spanish as a Second Language, but not in other subject areas, because this was the only subject area in which teachers were obligated to follow program-specific courses of study.

The Model A first-grade group was select, in that those pupils who were most talented and who had experience in the all-day kindergarten were enrolled in special first grade. Only pupils without this special achievement and background were in the regular first grade in Model A. The Model B group was not select.

Overall performance was below the levels anticipated by the program planners, with the exception of communication skills (Objective 3.1) in the first language (in all groups) and Latino Model B pupil performances in number concepts (3.3) and natural phenomena (3.4), and reading and writing (3.7), which were at or close to the specified levels of performance. The less-than-anticipated performance in the remaining

Table. 5.4. Mean Percentage of Model A and B Pupils Succeeding in Mastering the Microobjectives of the Regular First Grade

	Objective	Model A				Model B			
		Anglo		Latino		Anglo		Latino	
		Midyear N = 15	Year End N = 15	Midyear N = 15	Year End N = 15	Midyear N = 7	Year End N = 7	Midyear N = 16	Year End N = 16
3.1	Communication Skills, First Language (40 microobjectives) Criterion: 90%	85%	94%	82%	83%	-	-	87%	86%
3.2	Communication Skills, Second Language (11 microobjectives) Criterion: 80% Anglos, 90% Latinos	50%	44%	57%	56%	48%	67%	79%	78%
3.3	Number Concepts (18 microobjectives) Criterion: 90%	68%	78%	62%	73%	-	-	83%	82%
3.4	Natural and Biological Phenomena (23 micro-objectives) Criterion: 80%	40%	51%	51%	58%	-	-	74%	79%
3.7	Reading and Writing (10 microobjectives) No Criterion**	66%	64%	66%	76%	-	-	86%	84%

*Indicates performance beyond anticipated level.

**Six of the ten microobjectives for 3.7 were in the first language. They carried a criterion of 90%. The remaining four, in the second language, had no critierion specified in the proposal. The results shown are combined for all microobjectives. The mean performance for the six which carried 90% criterion at year end were as follows: Model A Anglos, 73%; Model A Latinos, 71%; Model B Latinos, 88%.

Table 5.5. Mean Percentage of Model A Pupils Succeeding on the Micro-objectives of the Special First Grade.

	Objective	Anglo Midyear N = 5	 Year End N = 5	Latino Midyear N = 5	 Year End N = 5
3.1*	Communciation Skills, First Language (33 microobjectives) Criterion: 90%	92%*	97%*	98%*	95%*
3.2*	Poetry, First and Second Languages (4 microobjectives) No Criterion	60%	60%	75%	65%
3.3*	Number Concepts in First and Second Languages (13 microobjectives) Criterion: 90%	80%	89%	95%*	88%
3.4*	Science in First and Second Languages (23 microobjectives) Criterion: 80%	50%	77%	82%*	89%*
3.5*	Social Studies, First and Second Languages (32 microobjectives) Criterion: 90%	88%	87%	90%*	90%*
3.6*	Second Language (22 microobjectives) Criterion: 80% Anglos, 90% Latinos	83%	81%	89%	98%*

**Indicates performance beyond anticipated level.

objectives was coupled with a lack of clear growth from midyear to year end in some subject areas: second language (3.2) for Model A Anglos, Model A Latinos, Model B Latinos; natural and biological sciences (3.4) for Model A Latinos; and reading and writing (3.7) for Model A Anglos.

The general trend in these results has been for Model A first-grade pupils to have performed less well than those of Model B. This was probably due to the removal of some of the best prepared and talented students from regular first grades and their placement in the special first grade. The objectives were planned and the criteria set _prior_ to the initiation of this special first grade.

Special First Grade

Table 5.5 shows the performance of this select group of students, most of whom had participated in the special all-day kindergarten the year before. The objectives of this program included most of those for the regular first grade, plus enriched activities with more second-language content. As can be seen, the performance by year end was at or very close to the levels stated in the objectives. At some other levels, comparison of midyear and year-end results suggests that in some subject areas the microobjectives specified for these classes may be too easy, as the objectives were attained early in the year. First-language communication skills (Objective 3.1*), number concepts (3.2*), social studies (3.5*) and second-language (3.6*) performance were at or close to the criterion both at midyear and at year end. One objective, poetry (3.2*) did not have a criterion.

Results were not always what would be expected. For example, pupils did not show clear-cut superiority in their first language (as compared to their performance in the second language) in number concepts (Objective 3.3), but the performance of Latino pupils was virtually the same in the two languages, and that of the Anglos superior in the second language to that of the first.

In most other objectives, performance of the Anglos was better in the first language than in the second, but that of the Latinos was similar in both the mother tongue and the second language.

Because the Special First grade program was tried during 1971-1972 for the first time, microobjective-by-microobjective presentation of the skills assessed appears in Figure 5.1, to permit review by curriculum developers. Table 5.6 summarizes the performance of pupils on those objectives which had both first- and second-language components.

While these results must be viewed cautiously (they are based on relatively few cases) it appears that at least for Latinos in this select group, skill in the second language approaches that in the first.

Table 5.6. Year-End Performance of Model A Special-First-Grade Pupils in the Mother Tongue and Second Language on Those Objectives Which Contained Mixtures of First- and Second-Language Skills.

Objective	Mother Tongue No. of Microobjectives	Mother Tongue % Success	Second Language No. of Microobjectives	Second Language % Success
Anglos (N=5)				
Objective 3.2* Poetry	1	60	3	60
Objective 3.3* Number Concepts	9	86	4	97
Objective 3.4* Science	13	85	10	68
Objective 3.5* Social Studies	28	91	5	64
Latinos (N=5)				
Objective 3.2* Poetry	1	80	3	60
Objective 3.3* Number Concepts	9	91	4	90
Objective 3.4* Science	13	89	10	88
Objective 3.5* Social Studies	28	91	5	84

Second Grade

The second-grade program also was operated in both Model A and Model B. In this instance, no special subgroups were delineated and the results shown in Table 5.7 are based on samples of all second-grade pupils in the program. (Data for the Anglo Model B pupils at midyear does not appear due to administrative error; it is not clear whether the evaluators neglected to have the teacher carry out the testing or the teacher failed to return the tests to the evaluation staff.)

Table 5.7. Percentage of Model A and Model B Pupils Succeeding on the Microobjectives of the Second Grade.

		Model A				Model B			
		Anglo		Latino		Anglo		Latino	
		Midyear N = 10	Year End N = 9	Midyear N = 10	Year End N = 12		Year End N = 5	Midyear N = 9	Year End N = 7
5.1	Reading Skills First Language Criterion: 90% (3 microobjectives)	94%*	98%*	95%*	95%*	(Not Tested at Midyear)		99%*	96%*
5.2	Poetry, First and Second Language, Criterion: 75% (6 microobjectives)	23%	35%	45%	35%			81%*	74%
5.3	Writing (First Language) Criterion: 85% (Two microobjectives)	80%	94%*	65%	75%			64%	78%
5.4	Spanish as a Second Language (Anglos only) Criterion: 80% (25 microobjectives)	36%	75%	--	--		66%	--	--
5.5	English as a Second Language (Latinos only) Criterion: 90% (25 microobjective)	--	--	58%	75%			75%	75%
5.6	Social Studies First Language, Criterion: 90% (11 microobjectives)	94%*	99%*	83%	70%			93%*	99%*
5.7	Science in the First Language, Criterion: 90% (3 microobjectives)	30%	33%	53%	30%			71%	93%*
5.8	Mathematics in the First Language. Criterion: 90% (31 microobjectives)	47%	60%	89%	52%			71%	75%
	Oral Skills Review (Mother tongue) Criterion: none (26 microobjectives)	83%	94%	98%	88%			91%	86%

*Indicates performance at or above criterion

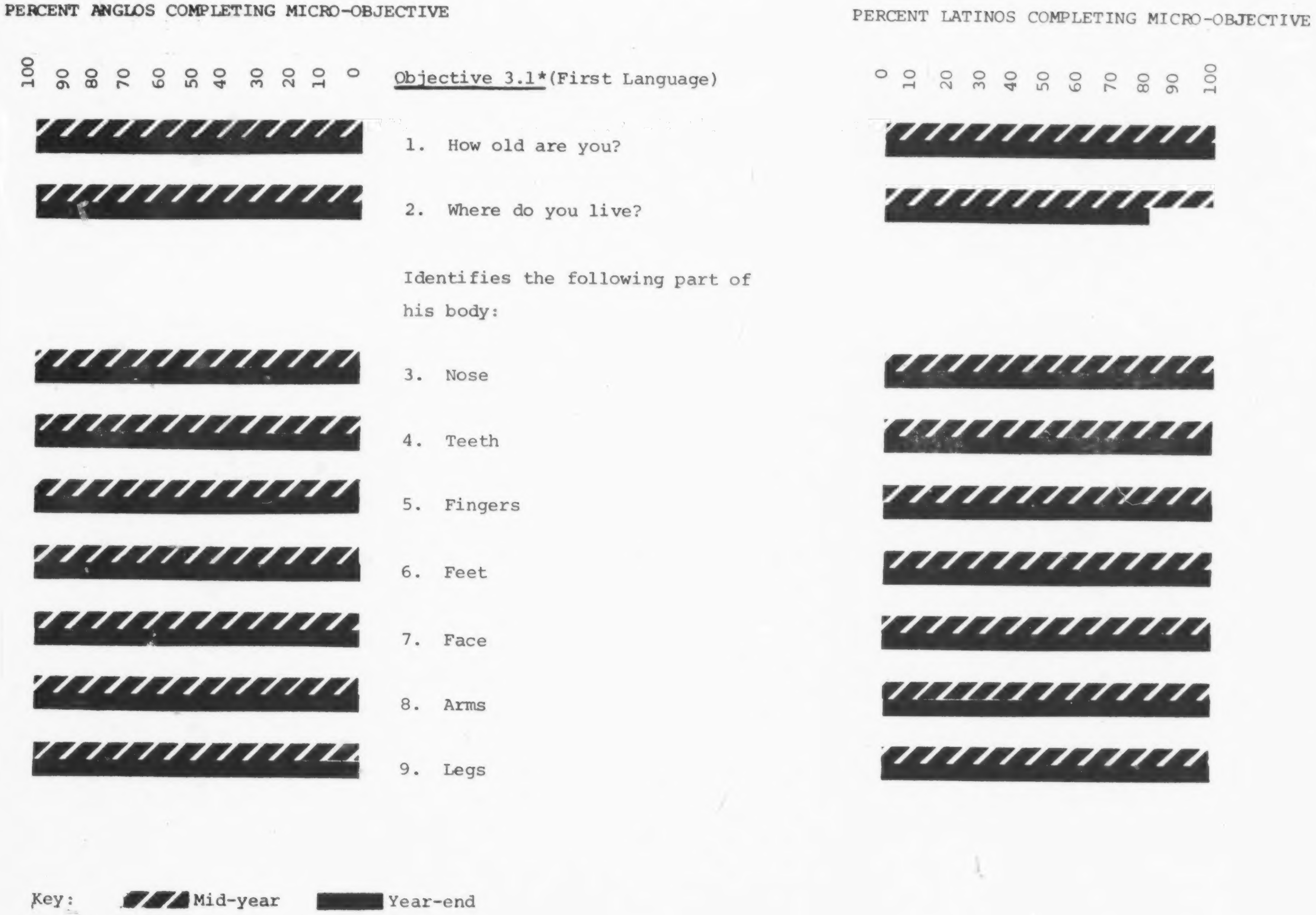
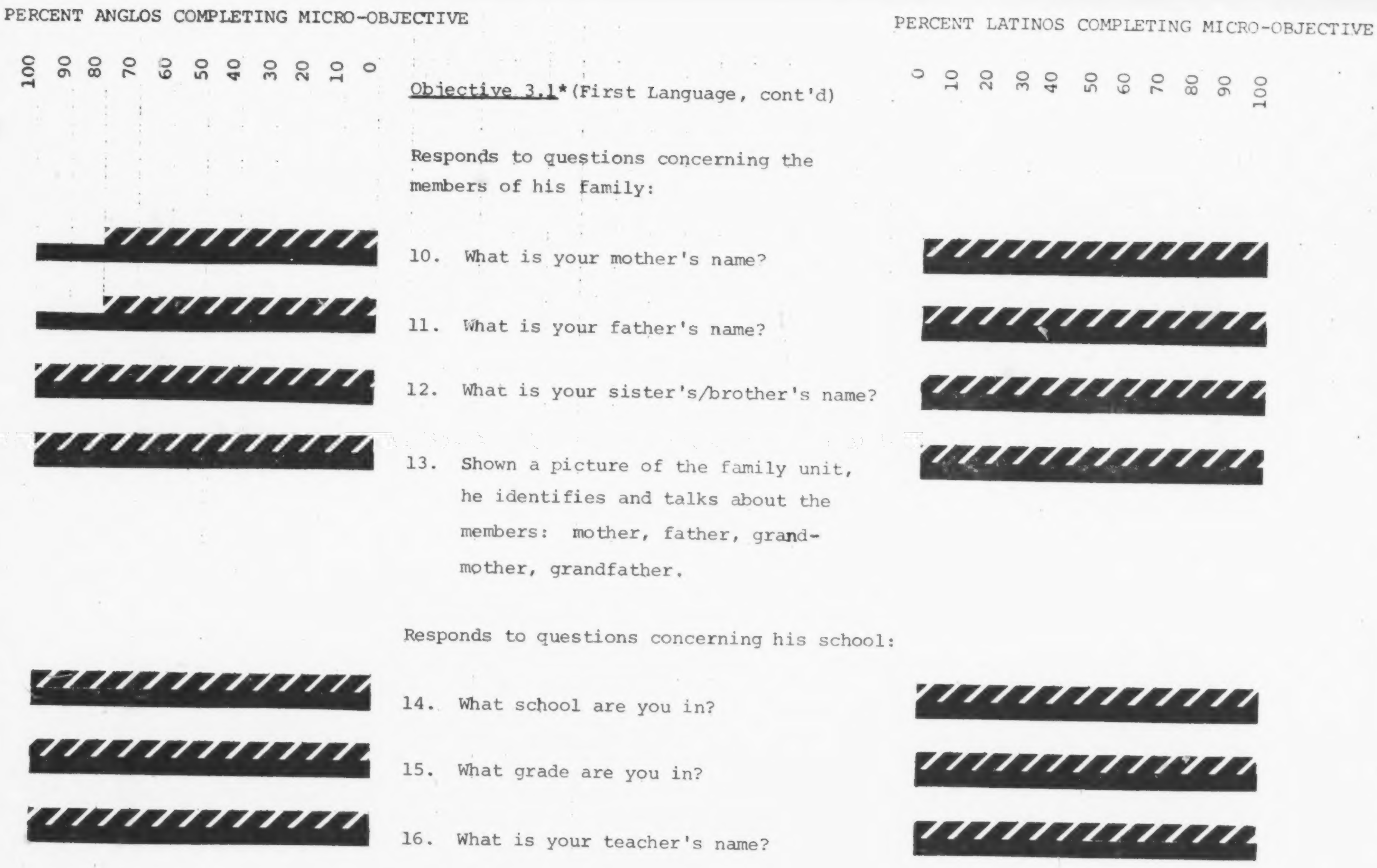


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1



Objective 3.1*(First Language, cont'd)

Responds to questions concerning the members of his family:

10. What is your mother's name?

11. What is your father's name?

12. What is your sister's/brother's name?

13. Shown a picture of the family unit, he identifies and talks about the members: mother, father, grandmother, grandfather.

Responds to questions concerning his school:

14. What school are you in?

15. What grade are you in?

16. What is your teacher's name?

FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2

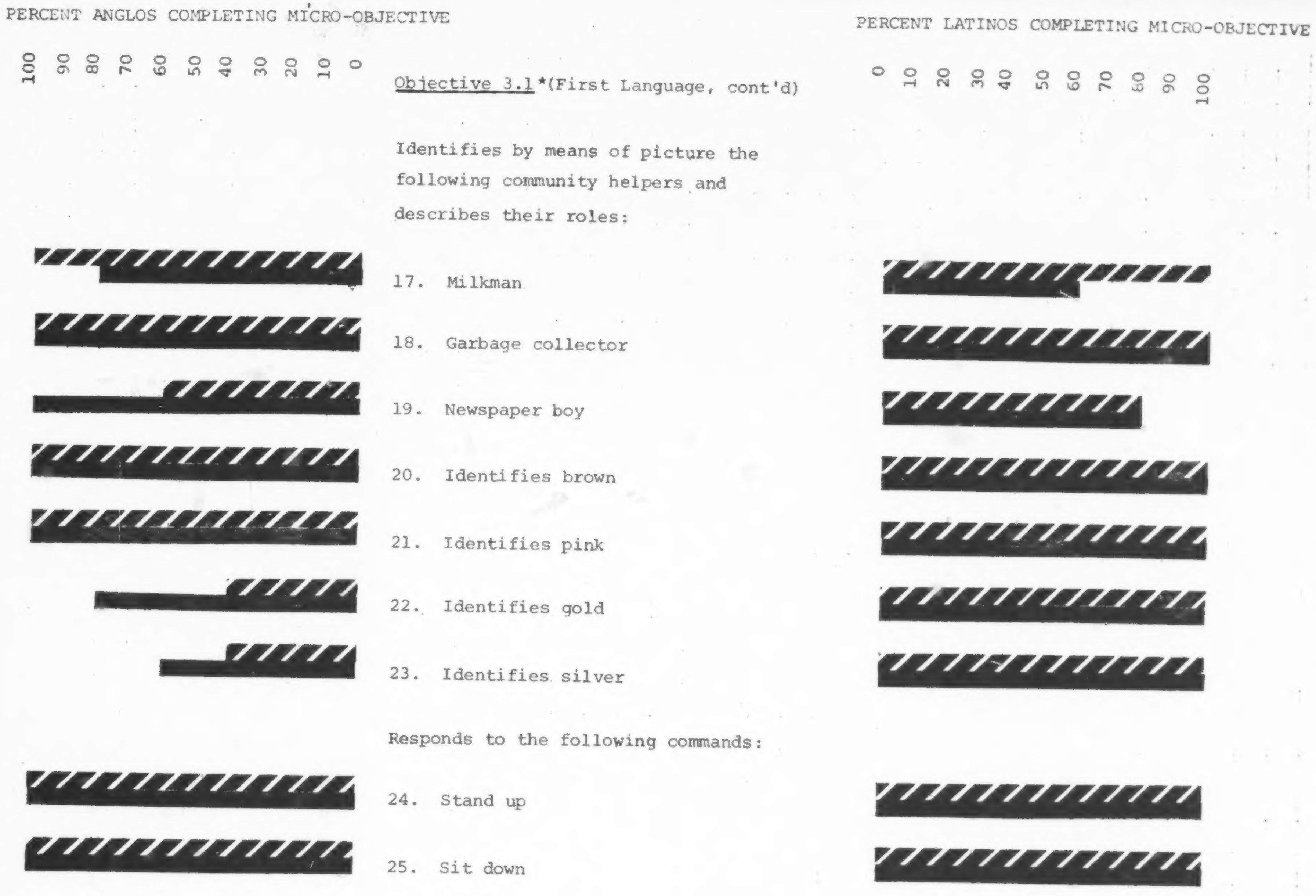


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3

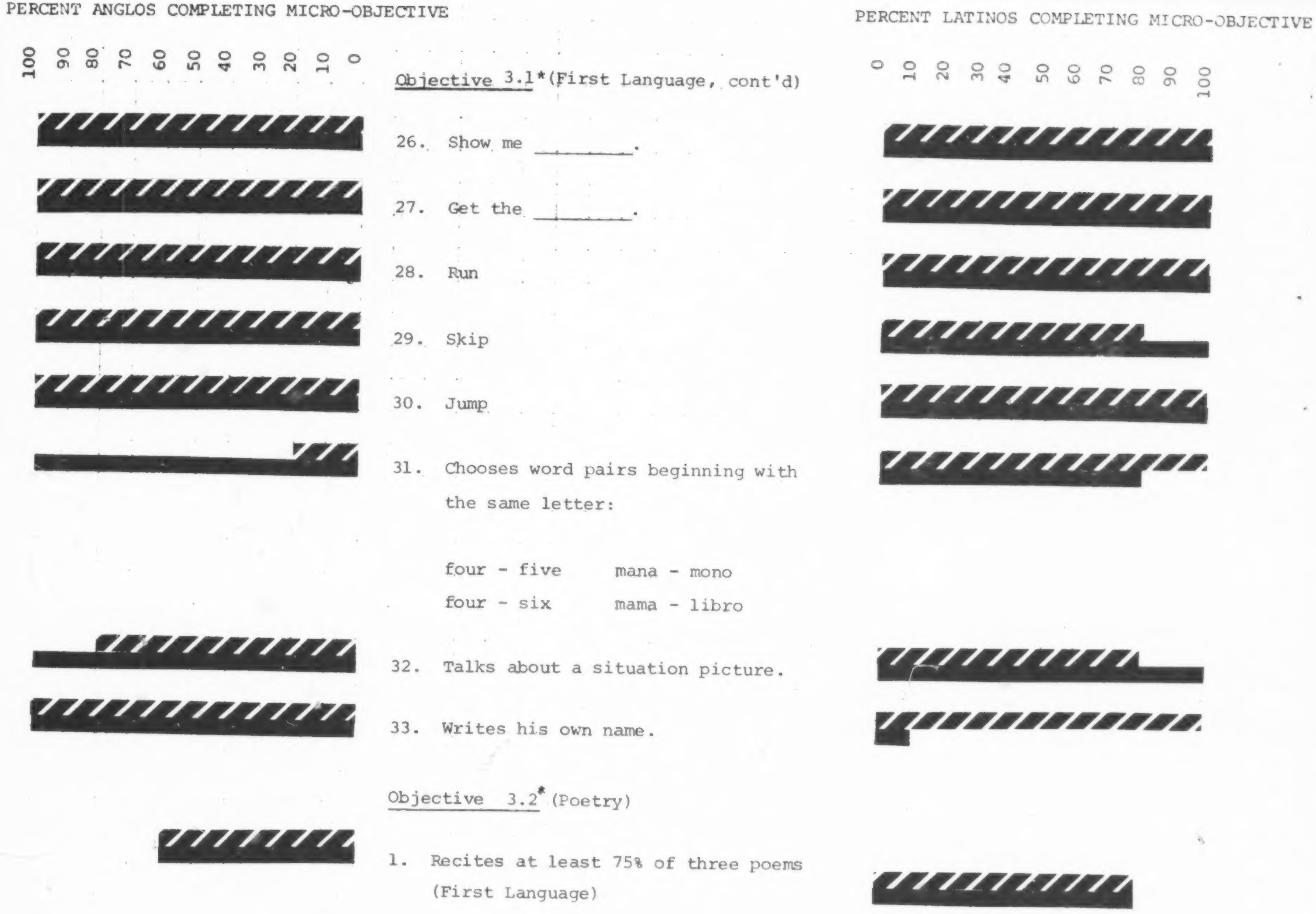


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

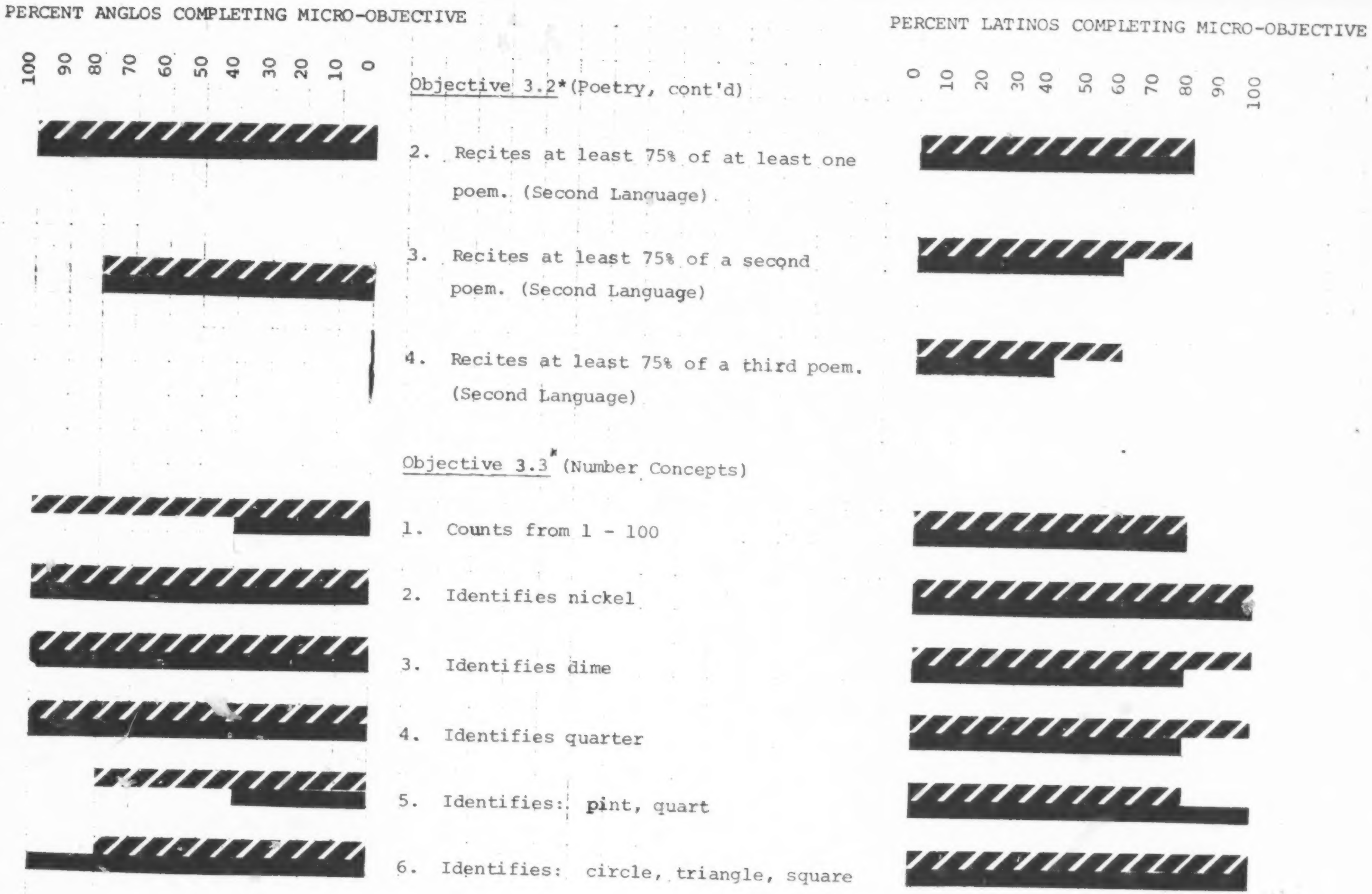


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5

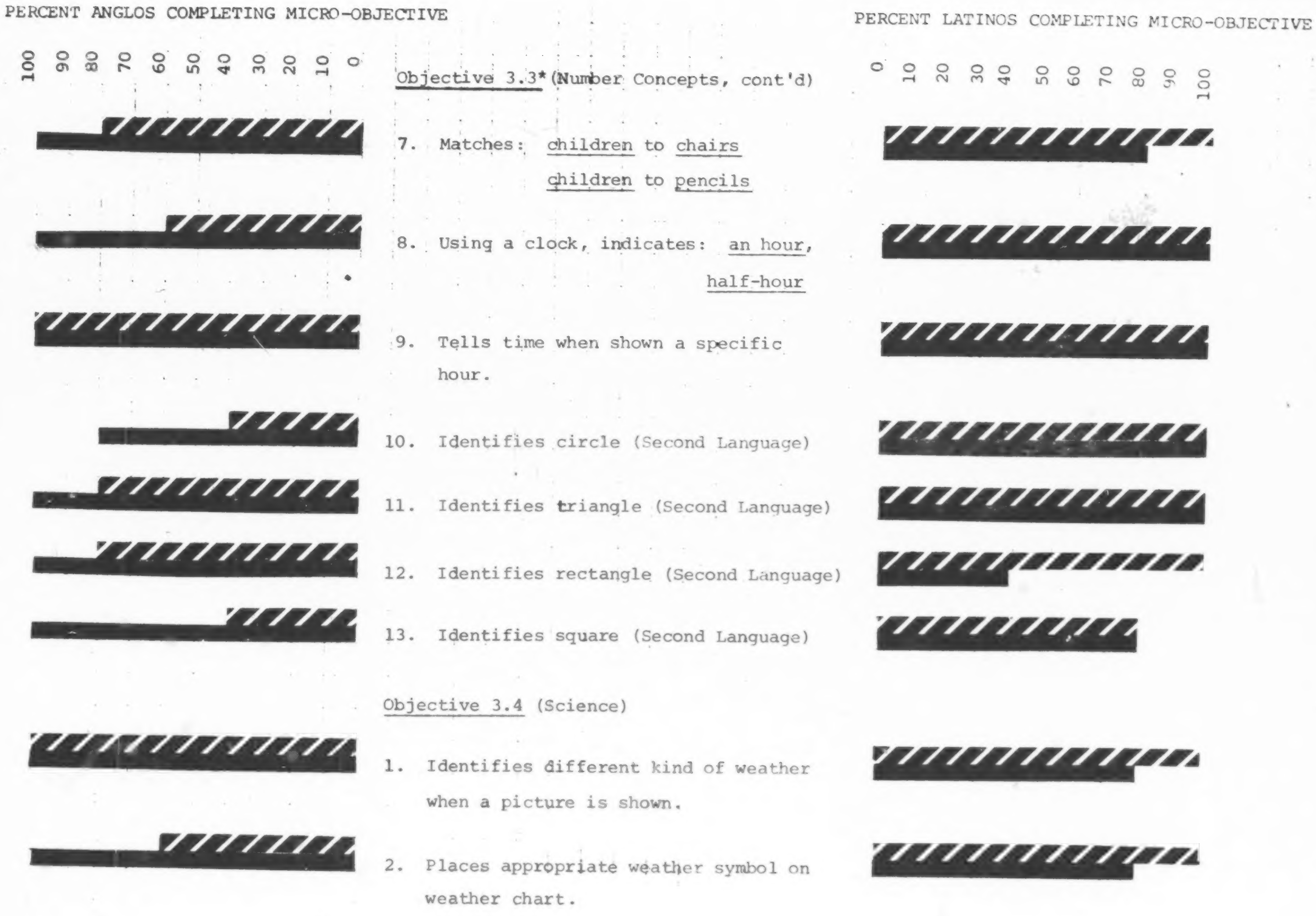


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6

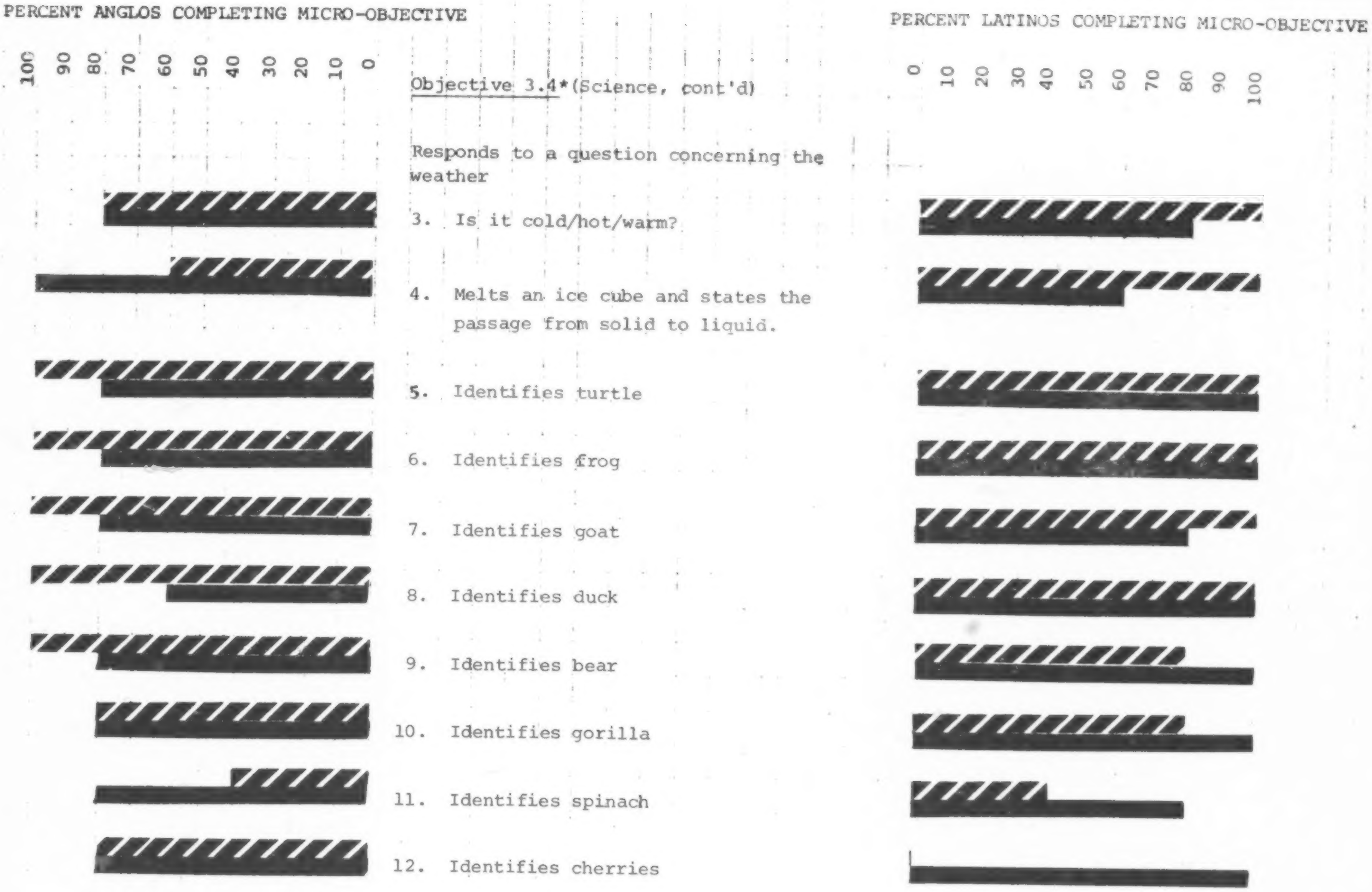


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

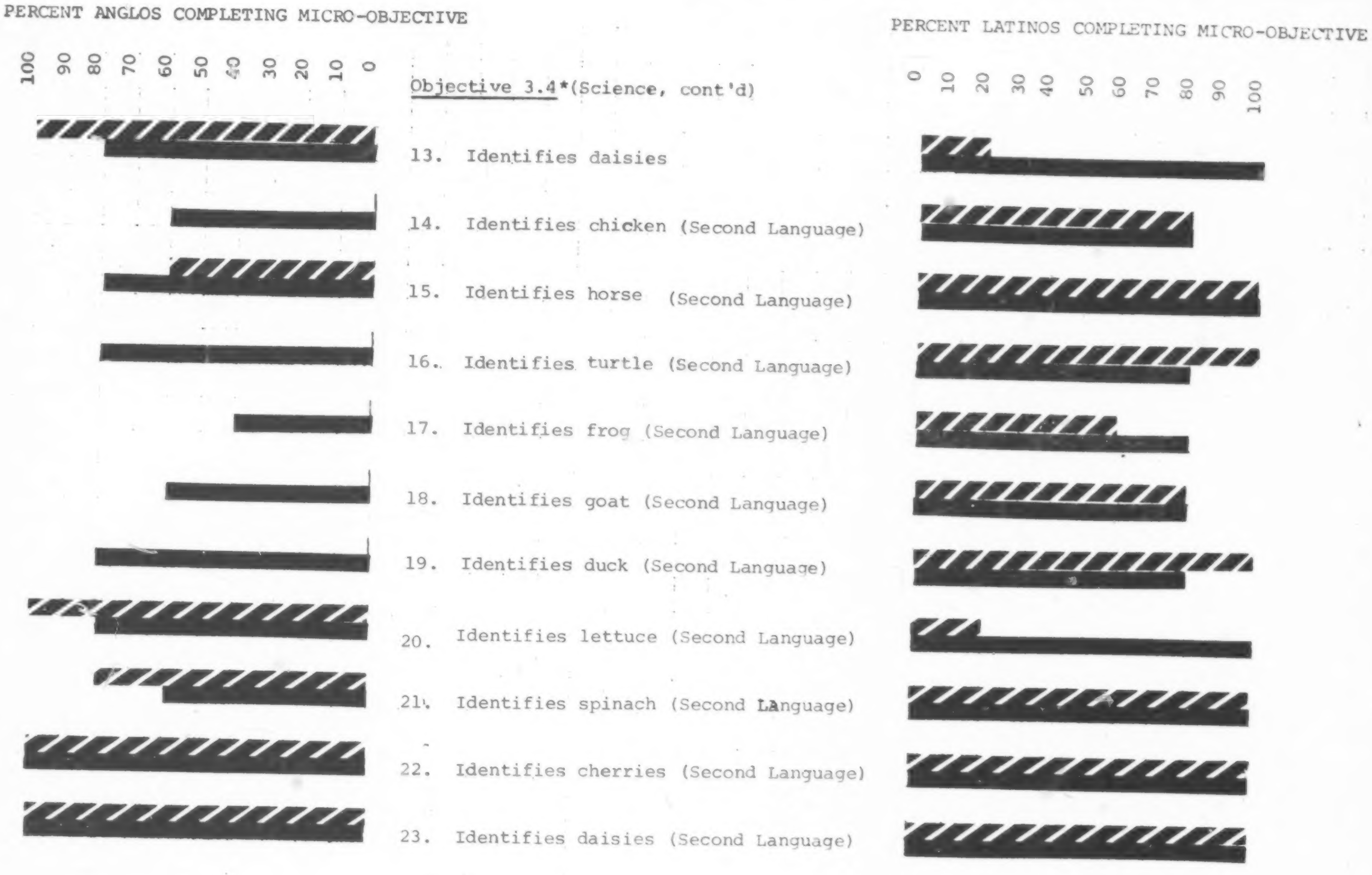


FIGURE 5 1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

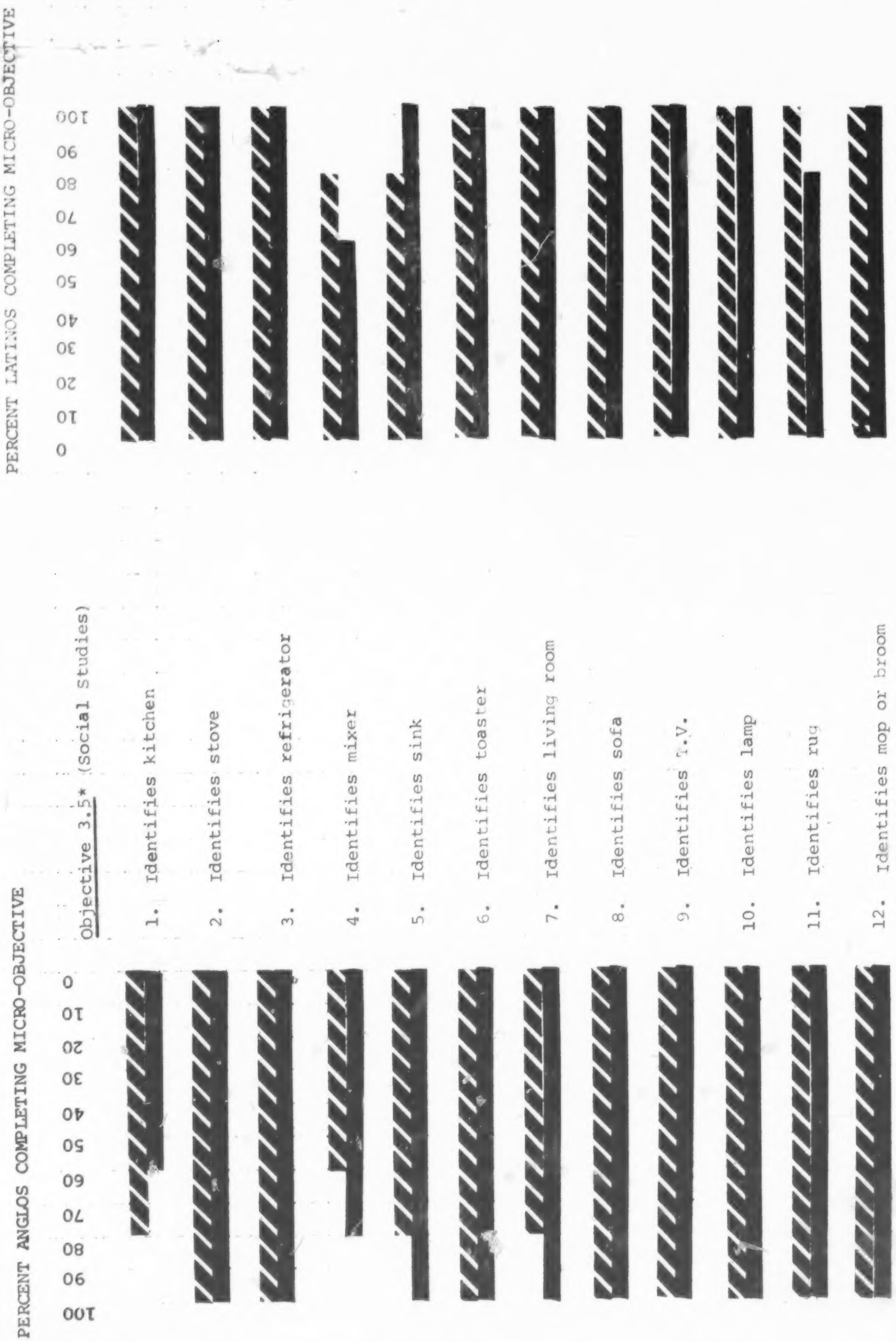


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 9

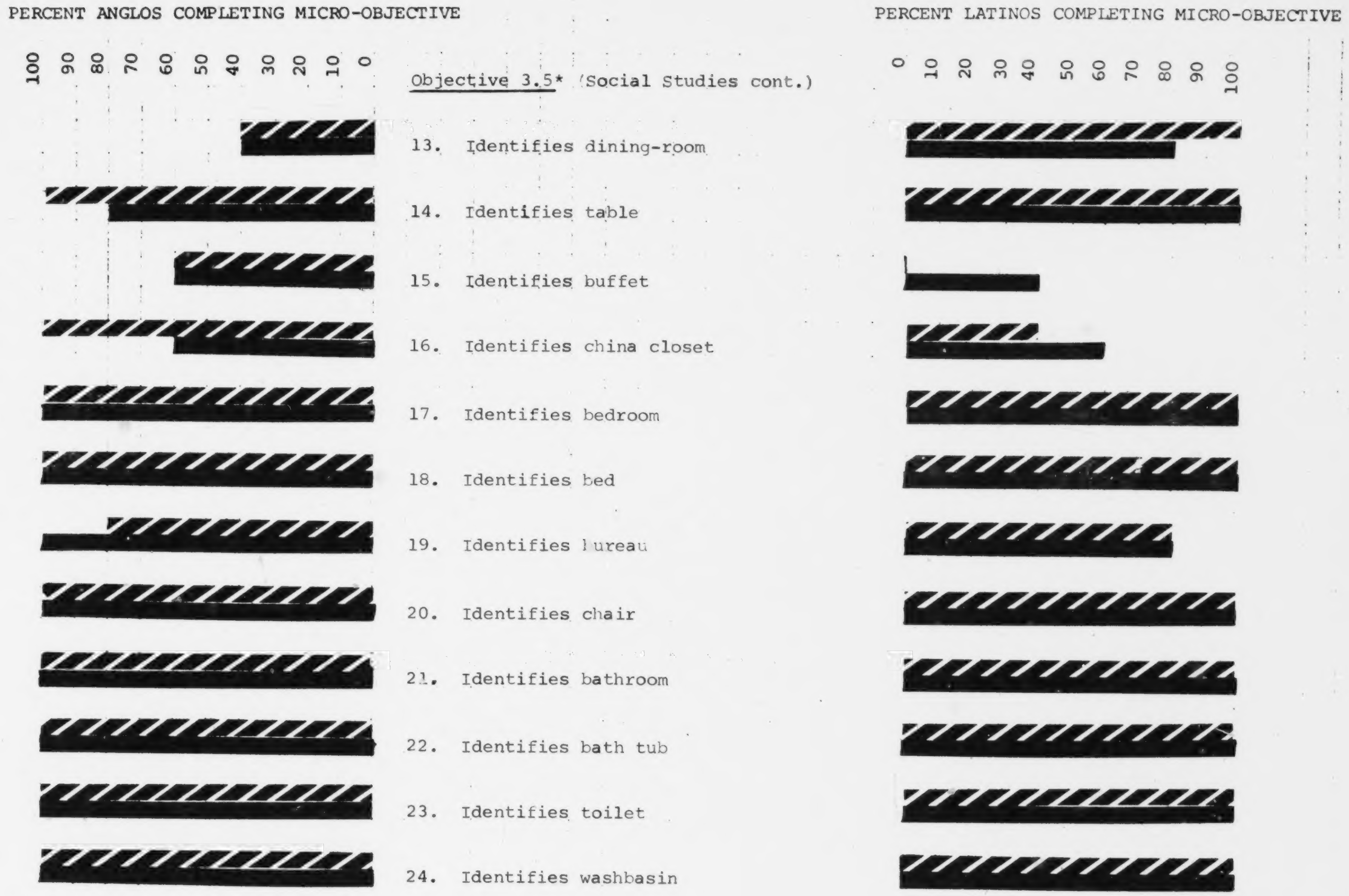


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 10

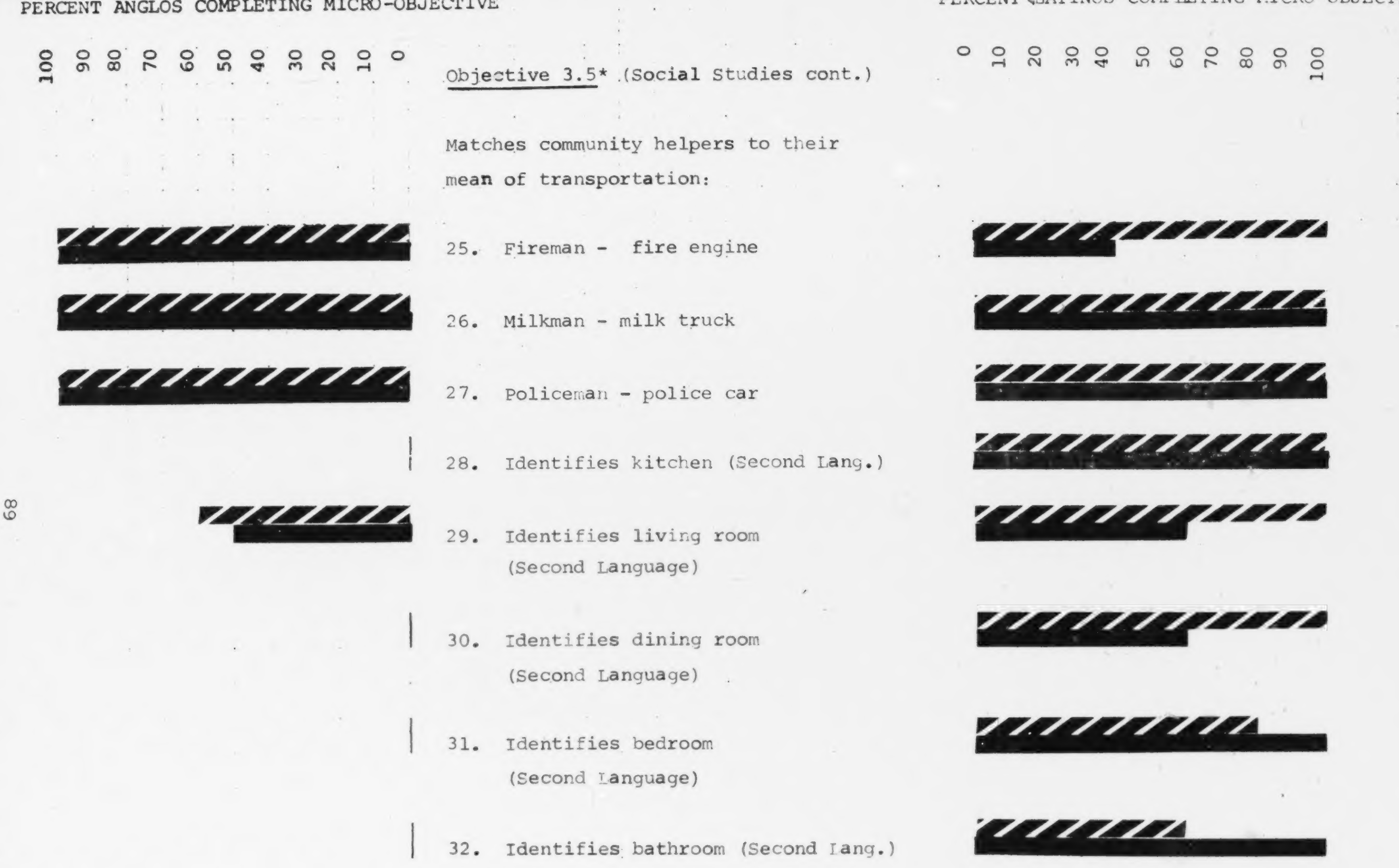


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 11

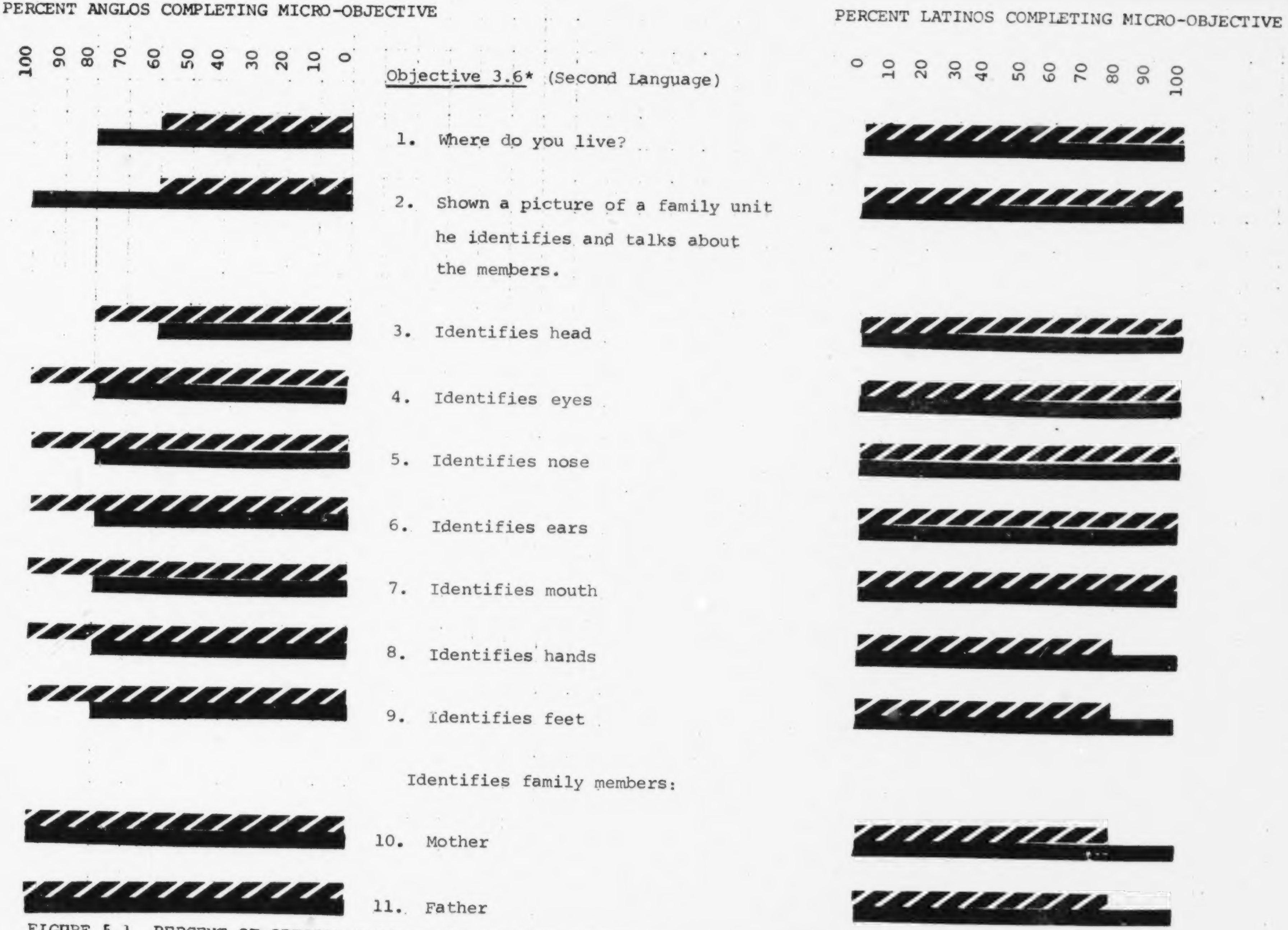


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 12

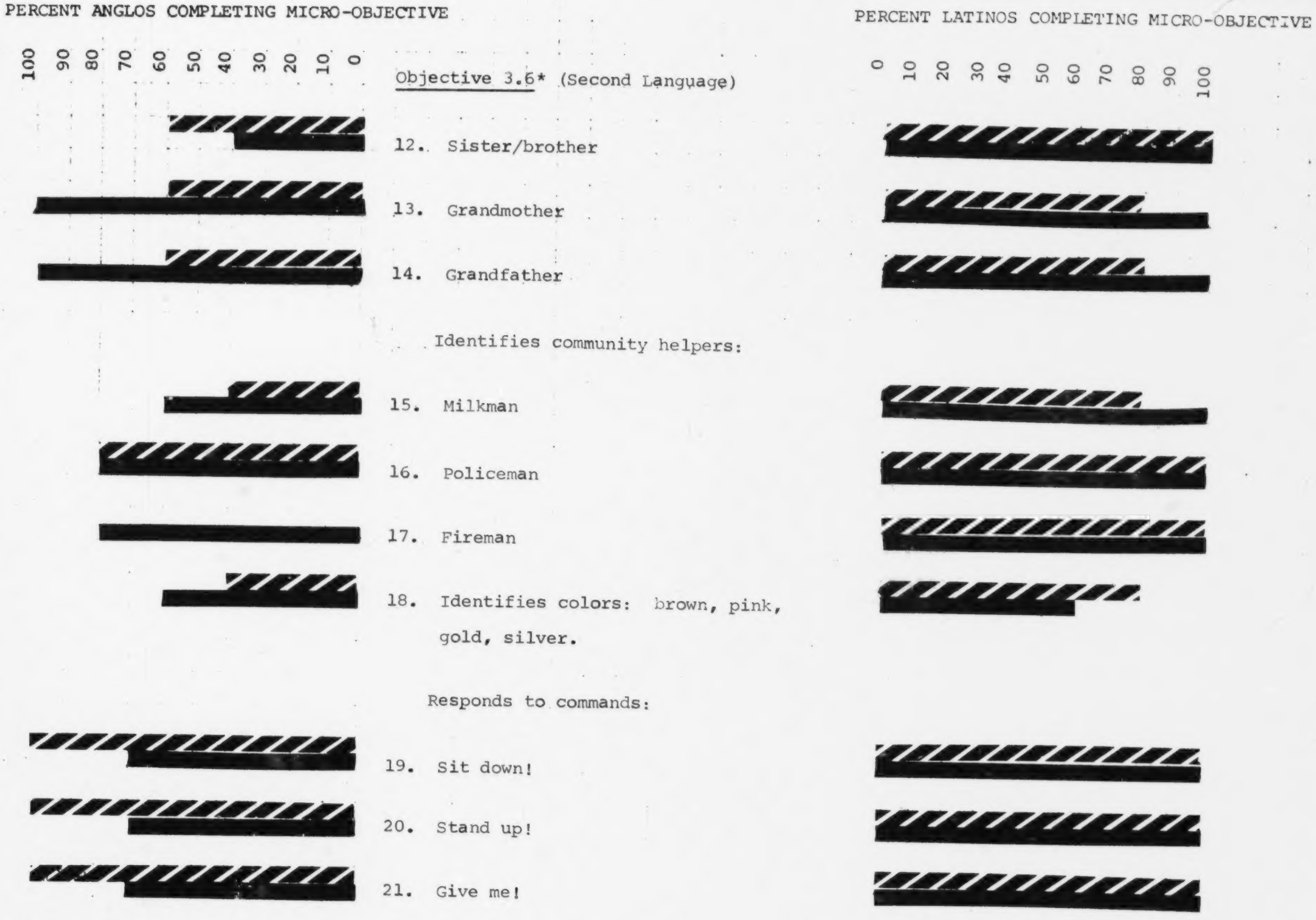


FIGURE 5.1 PERCENT OF SPECIAL-FIRST-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 13

Overall, the results show uneven performance, with some objectives being achieved early in the year and others not attained at either midyear or year end. All pupils were able to perform at criterion levels on the first-language reading skills (Objective 5.1) both at midyear and at year end.

The objectives for poetry in the first and second languages (Objective 5.2) was not attained by any group in Model A, but Model B Latinos attained it at midyear and were close to the criterion at year end. Writing (Objective 5.3) was mastered at year end by only one group, Model A Anglos, but other groups were fairly close at year end. Comparison of writing performance at midyear and year end shows small but consistent gains from midyear to year end, with the year-end results close to the level specified in the objective. Model A Latino performance in English as a Second Language (5.5) showed a substantial gain from midyear to year end but performance was not up to the expected criterion. In Model B, Latino performance was close to the criterion at midyear but there was no gain from midyear to year end. In Spanish as a Second Language (Objective 5.4), Anglos showed growth from midyear to year end in Model A; the year-end result was close to that specified in the objective. Model B pupils tested at year end performed slightly less well than those of Model A; however, the small number of pupils observed suggests that the difference was probably due to chance.

Results in social studies (5.6) showed that Anglos in Model B both performed at the criterion levels at midyear and year end. Latino Model A second graders were nearly at criterion levels at midyear, but then fell back at year end.

The pupils' knowledge of science concepts (Objective 5.7) was markedly different in the Model A and Model B components. Neither Anglo nor Latino Model A pupils were close to the criterion at either midyear or year end (and Latino pupils regressed). Model B Latinos, on the other hand, proceeded to move ahead from midyear to year end and attained the objective.

Second-grade pupil performance in mathematics was mixed. Anglo Model A pupils showed some growth from midyear to year end, but pupils stayed far below the expected criterion. Latino Model A pupils observed at midyear were nearly at the criterion, but those observed at year end had regressed substantially. In Model B, Latino pupils performed better at year end than had pupils observed in the other two groups, but they showed little growth from midyear to year end and did not meet the criterion.

In addition to microobjectives specified for objectives in the proposal, the second-grade log had a collection of microobjectives for review of concepts called the Oral Skills Review. All microobjectives of this review were like the first-language objectives of earlier grade levels. Results for these skills was uniformly high (close to 90%) each time they were observed.

Third Grade

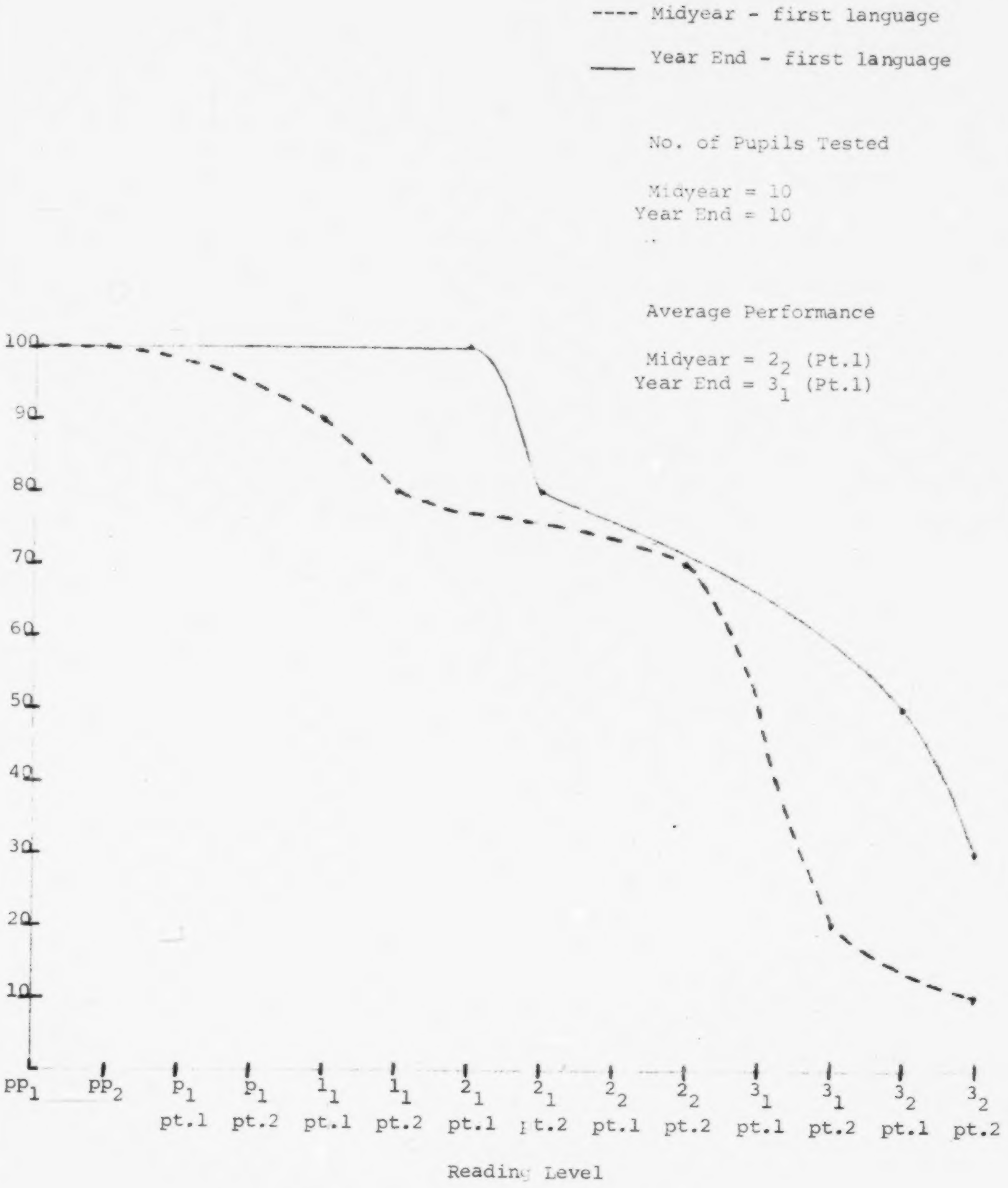
During 1971-1972, the third-grade component was operational for the first time, in the Model A component only. In addition to assessment of microobjectives, the third-grade log of pupil behaviors contained a special test of two reading objectives, 6.1 (reading in the mother tongue) and 6.2 (reading in the second language). According to the proposal, at year end, 50% of the pupils should be reading in their first language at Level 3, Part 1, of their readers; 80% should be able to read in Level 2: and all pupils should be able to read Level 1 successfully. Figure 5.2 shows the performance of Anglo pupils. As can be seen from the figure, the pupils sampled at year end were reading close to the distribution specified by the objective, with all pupils able to read at Level 1 and into Level 2. Eighty percent of the pupils had been able to read to the midpoint of Level 2, and 50% of the pupils were reading near the midpoint of Level 3.

Third-grade Latino pupils reading in their mother tongue did not have the opportunity to read at so high a level, as (according to supervisors) the most difficult text in use in the program was a Level 2 text. As shown in Figure 5.3 at year end only 10% of the pupils had completed the second-year text (Level 2.2), and the typical pupil was reading at the first half of Level 1 at both midyear and year end. This lack of growth from midyear to year end may point to problems of program management, especially the absence of Level 3 texts.

Results for second-language reading showed that both Anglo and Latino pupils were below stated objectives. The objective stated that all Anglos would be able to read the primer level and 40% would be able to read Level 1. As shown in Figure 5.4, by year end only 66% of the Anglos tested could successfully read a portion of the preprimer and, of course, fewer pupils could read the primer. No Anglos could read Level 1.

The objective stated that all Latinos would be able to read Level 1, half would be able to read Level 2, and 10% would be able to read Level 3. Results shown in Figure 5.5 revealed that 80% of the Latino pupils tested could read the English preprimer at midyear, and some could read as far into the texts as Level 2.2. Although this second-language performance of Latinos was less than anticipated, results were remarkably similar to those of Latinos in their mother tongue. Thus, the data seem to suggest that Anglo pupils in the program are learning reading skills primarily in their mother tongue and only beginning to progress in their second language. In contrast, Latino pupils seem to be developing reading as quickly in English as in Spanish, their performance in the two languages being less than appropriate for their grade level and less than stated in the objectives.

Results for other objectives of the third grade Model A component are summarized in Table 5.8 and are presented graphically, by microobjective, in Figure 5.5. As can be seen in the table, only two of the remaining objectives carried criteria--both groups of pupils were expected to master 75% of the skills designated for the second-language objectives (6.7 and 6.8). Neither Anglo nor Latino pupils



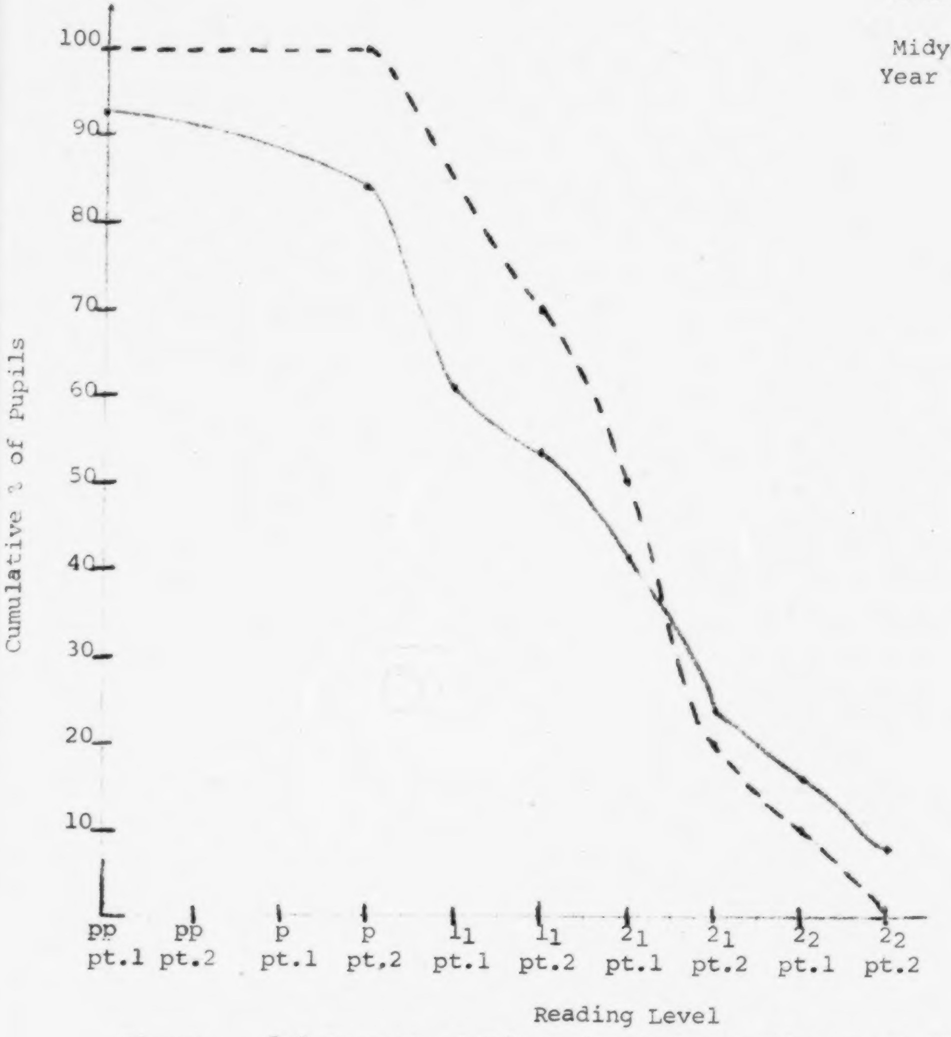
No. of Pupils Tested

Midyear = 10
Year End = 10

Average Performance

Midyear = 2_2 (Pt.1)
Year End = 3_1 (Pt.1)

Figure 5.2 Percent of 3rd grade Anglo pupils tested who could read the Bank Street reading texts to the criterion level.



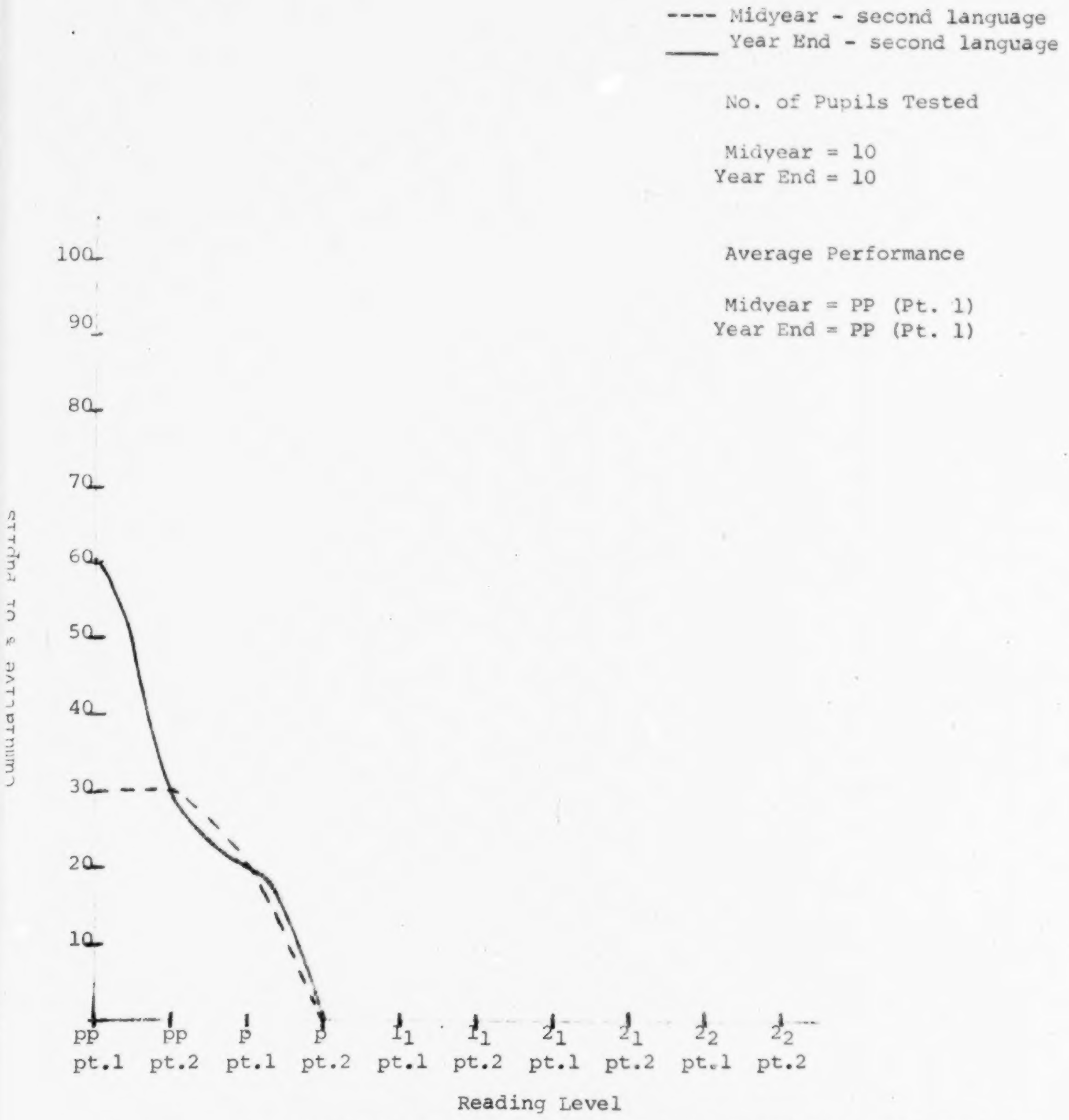
No. of Pupils Tested

Midyear = 10
Year End = 13

Average Performance

Midyear = 1_1 (Pt. 1)
Year End = 1_1 (Pt. 1)

Figure 5.3 Percent of 3rd grade Latino pupils tested who could read the Laidlaw reading texts to the criterion level.



No. of Pupils Tested

Midyear = 10
Year End = 10

Average Performance

Midyear = PP (Pt. 1)
Year End = PP (Pt. 1)

Figure 5.4 Percent of 3rd grade Anglo pupils tested who could read the Laidlaw reading texts to the criterion level.

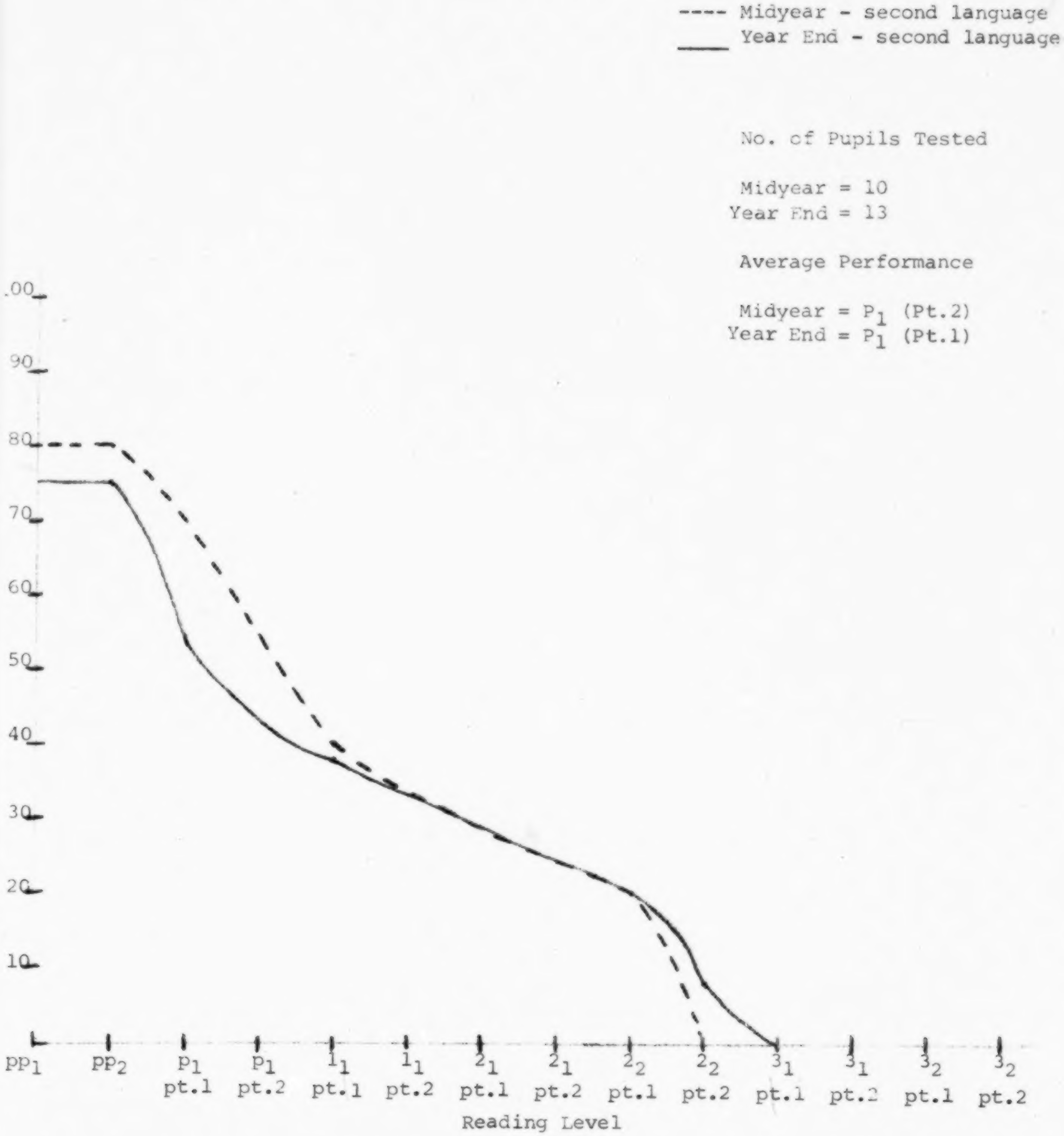


Figure 5.5 Percent of 3rd grade Latino pupils tested who could read the Bank Street reading texts to the criterion level.

Table 5.8. Mean Percentage of Model A Third Graders Succeeding on the Model School Objectives.

	Objective	Anglo Midyear N = 10	Anglo Year End N = 9	Latino Midyear N = 10	Latino Year End N =14
6.6	Spanish as a Second Language (20 micro-objectives) Criterion: 75%	46%	57%	--	--
6.7	English as a Second Language, Latinos (33 microobjectives) Criterion: 75%	--	--	--	72%
6.8	Social Studies in First Language (16 microobjectives) Criterion: None	71%	70%	57%	57%
6.9	Second-Language Social Studies (3 micro-objectives) Criterion: None	63%	11%	43%	55%
6.11	Arithmetic in First Language (28 micro-objectives) Criterion: None	63%	71%	51%	83%
6.12	Arithmetic in Second Language (8 micro-objectives) Criterion: None	59%	58%	45%	63%

succeeded in meeting these criteria, although by year end, the Latino performance in English as a Second Language was very close to the anticipated level. In social studies, two objectives which had no criterion were designated, one for performance in the first language (6.8) and one for performance in the second language (6.9). In the first language, pupil performance was the same at midyear as at year end, with the Anglos at about 70%, Latinos at 57%. In the second language, Anglo performance was quite high (63%) at midyear but regressed sharply to 11% in the sample observed by year end. In contrast, Latino performance in social studies in the second language showed continued growth from the beginning to the end of the school year.

The arithmetic objectives for first and second languages also lacked criteria for the performance of microobjectives in the logs (although criteria for the testing situation reported in Study 8 were included). In the first language some growth was observed in the number skills from midyear to year end for both ethnic groups, Anglos rising from 63% to 71% mastery, Latinos rising from 51% to 83%. In second-language arithmetic skills Anglo pupils' performances apparently remained the same (at just under 60%), but Latino pupils showed growth from below the Anglo level (45%) at midyear to slightly above it (63%) at year end.

Validity Check

To assure that the data gathered by teachers were accurate, random samples of pupils in the log study were drawn and rechecked on six microobjectives. At midyear and year end 25 pupils were observed. Overall, the results showed that there was 75.5% agreement at midyear and 75% at year end, with a trend for the agreement to be slightly better in Model B than in Model A in both instances (71% versus 75% at midyear, 77% versus 80% at year end). At midyear the number of observations in which the pupils performed better in the validity check than they had when tested by the teacher was nearly the same as the number of observations in which they performed more poorly. At year end the validity check showed that teachers reported more success than the evaluator was able to verify in three of four cases where discrepancies existed.

Discussion

Interpretation of the outcomes of single objectives in this study must be done with great caution, because the number of observations which went into each is small. However, when trends emerge which cut across groups, observation times, and grade levels, these seem worthy of attention.

One such trend in the results of the 1971-1972 log study is a lack of visible growth from midyear to year end in most grade levels and language groups. This lack of growth seems to have two different causes. In the upper grade levels, little progress was made during the course of the year and the criterion was never met. This trend seemed to be stronger in the older, Model A program, suggesting that with familiarity with the operation of the program, the supervisors exerted less control to assure that classroom activities were consistent with the objectives of the program. For Model B this lack of growth from midyear to year end was less pronounced, possibly due to the use of the Miami curriculum materials which provided a greater amount of structure than was available with the materials used in the Model A component.

In the lowest grade levels, the lack of visible progress from midyear to year end resulted from attainment of nearly all objectives during the first part of the year. This pattern suggests that the stated objectives in the program may have been too easy for the pupil groups. Informal observation and discussion with teachers showed that most went beyond the written program guidelines in their teaching. Any enrichment of the microobjectives for the early levels could capitalize on the insights gained by these teachers.

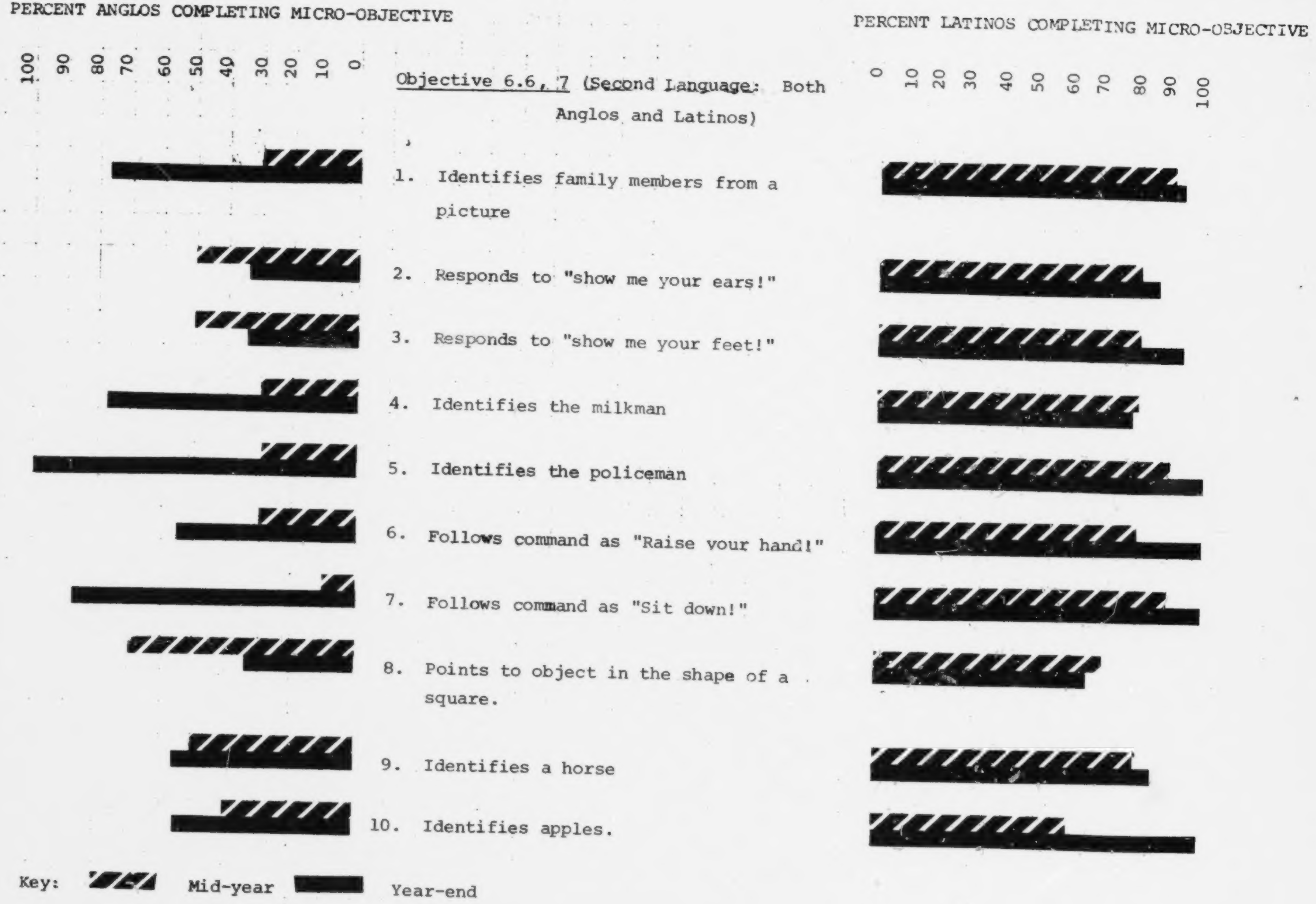
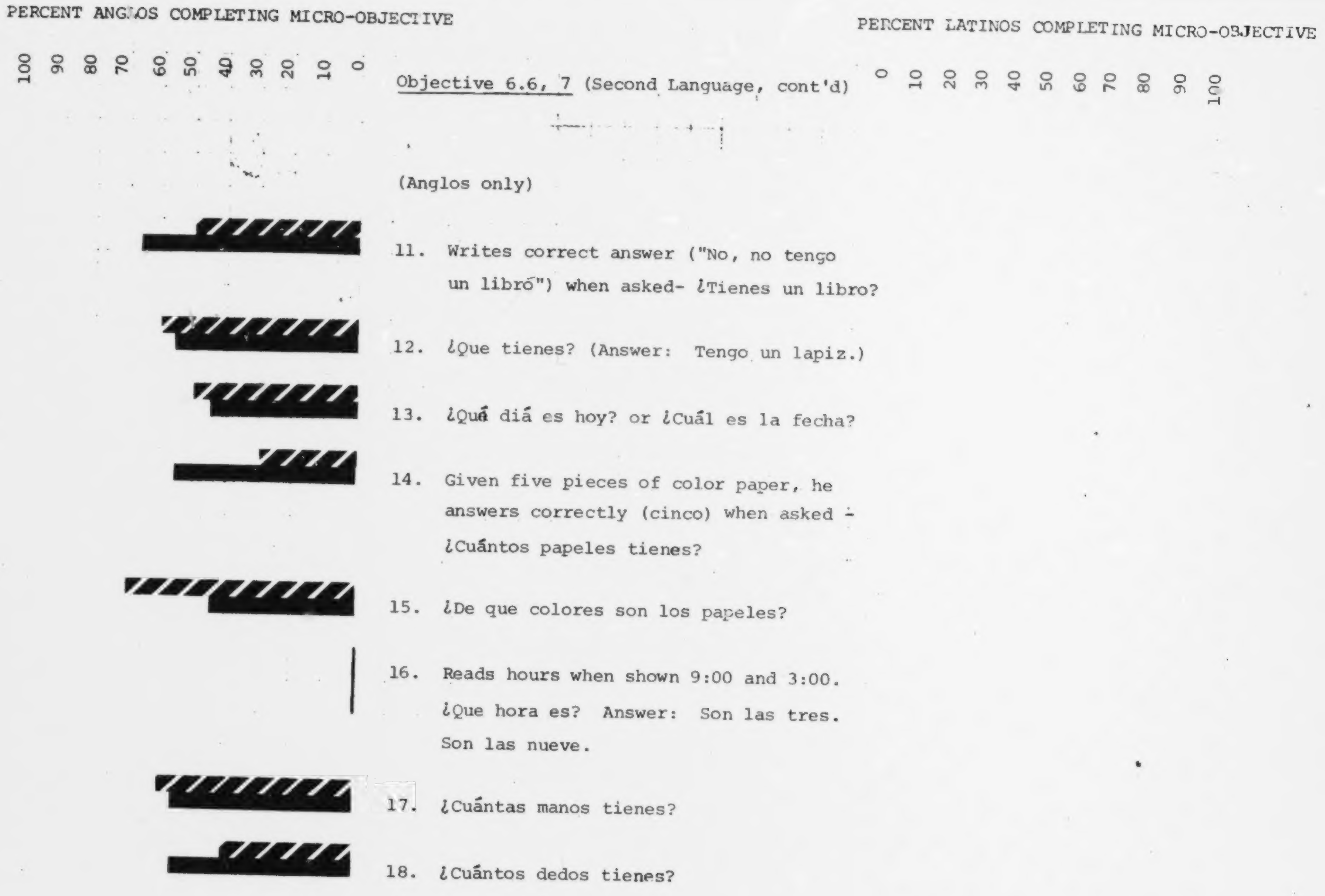


FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 1



Objective 6.6, 7 (Second Language, cont'd)

(Anglos only)

11. Writes correct answer ("No, no tengo un libró") when asked- ¿Tienes un libro?

12. ¿Que tienes? (Answer: Tengo un lapiz.)

13. ¿Quá diá es hoy? or ¿Cuál es la fecha?

14. Given five pieces of color paper, he answers correctly (cinco) when asked - ¿Cuántos papeles tienes?

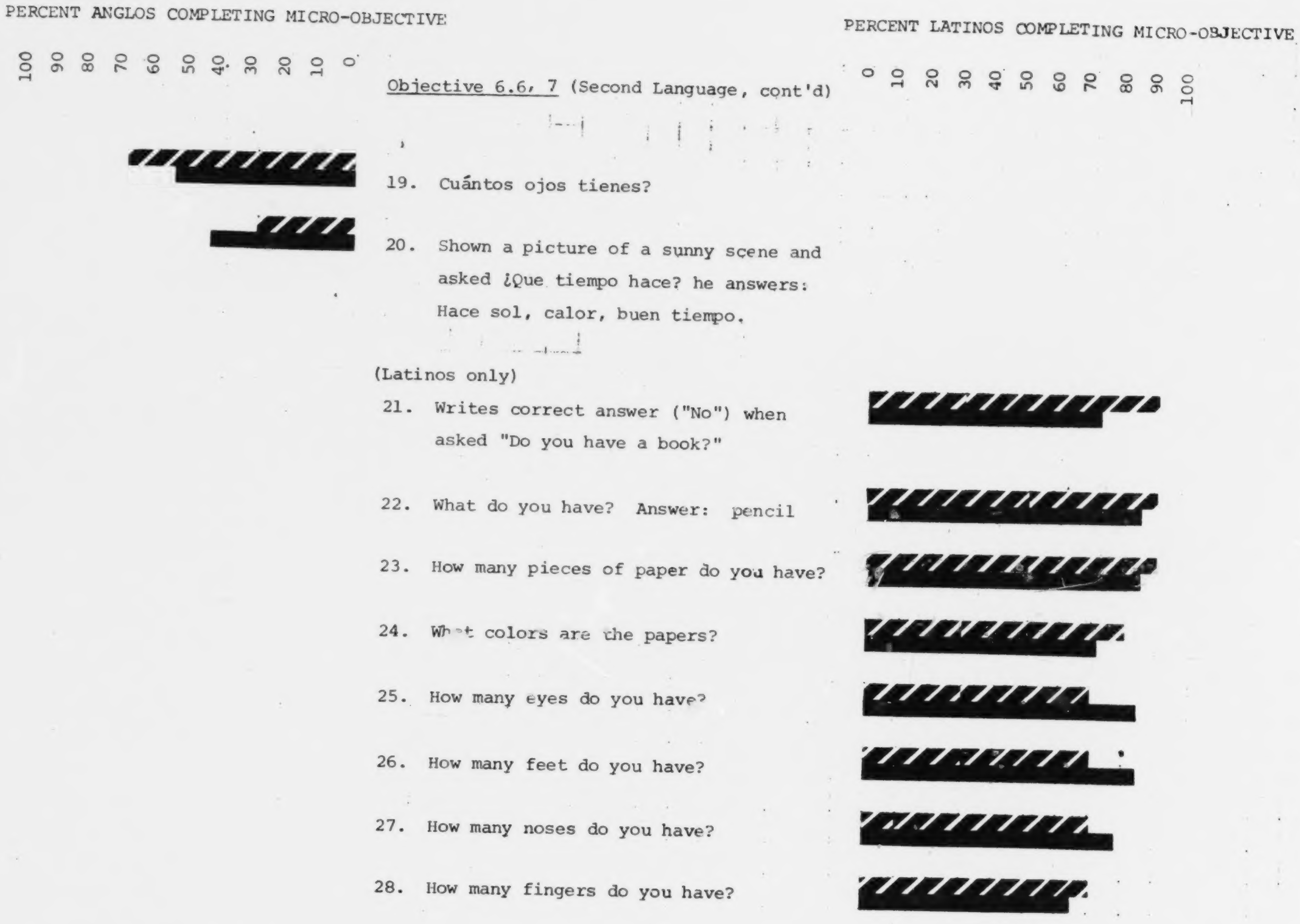
15. ¿De que colores son los papeles?

16. Reads hours when shown 9:00 and 3:00. ¿Que hora es? Answer: Son las tres. Son las nueve.

17. ¿Cuántas manos tienes?

18. ¿Cuántos dedos tienes?

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 2



Objective 6.6, 7 (Second Language, cont'd)

19. Cuántos ojos tienes?

20. Shown a picture of a sunny scene and asked ¿Que tiempo hace? he answers: Hace sol, calor, buen tiempo.

(Latinos only)

21. Writes correct answer ("No") when asked "Do you have a book?"

22. What do you have? Answer: pencil

23. How many pieces of paper do you have?

24. What colors are the papers?

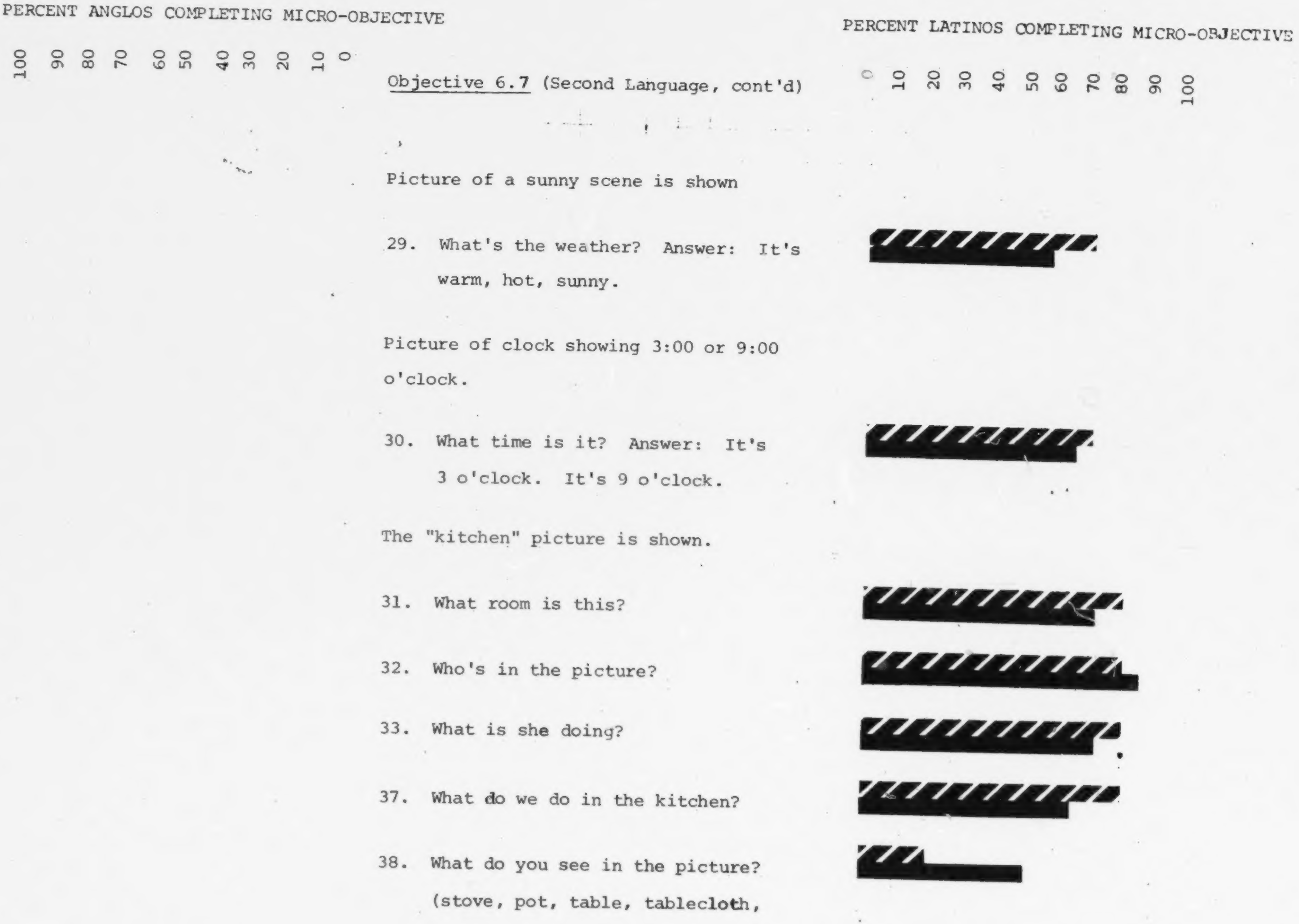
25. How many eyes do you have?

26. How many feet do you have?

27. How many noses do you have?

28. How many fingers do you have?

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 3



Objective 6.7 (Second Language, cont'd)

Picture of a sunny scene is shown

29. What's the weather? Answer: It's warm, hot, sunny.

Picture of clock showing 3:00 or 9:00 o'clock.

30. What time is it? Answer: It's 3 o'clock. It's 9 o'clock.

The "kitchen" picture is shown.

31. What room is this?

32. Who's in the picture?

33. What is she doing?

37. What do we do in the kitchen?

38. What do you see in the picture? (stove, pot, table, tablecloth,

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 4

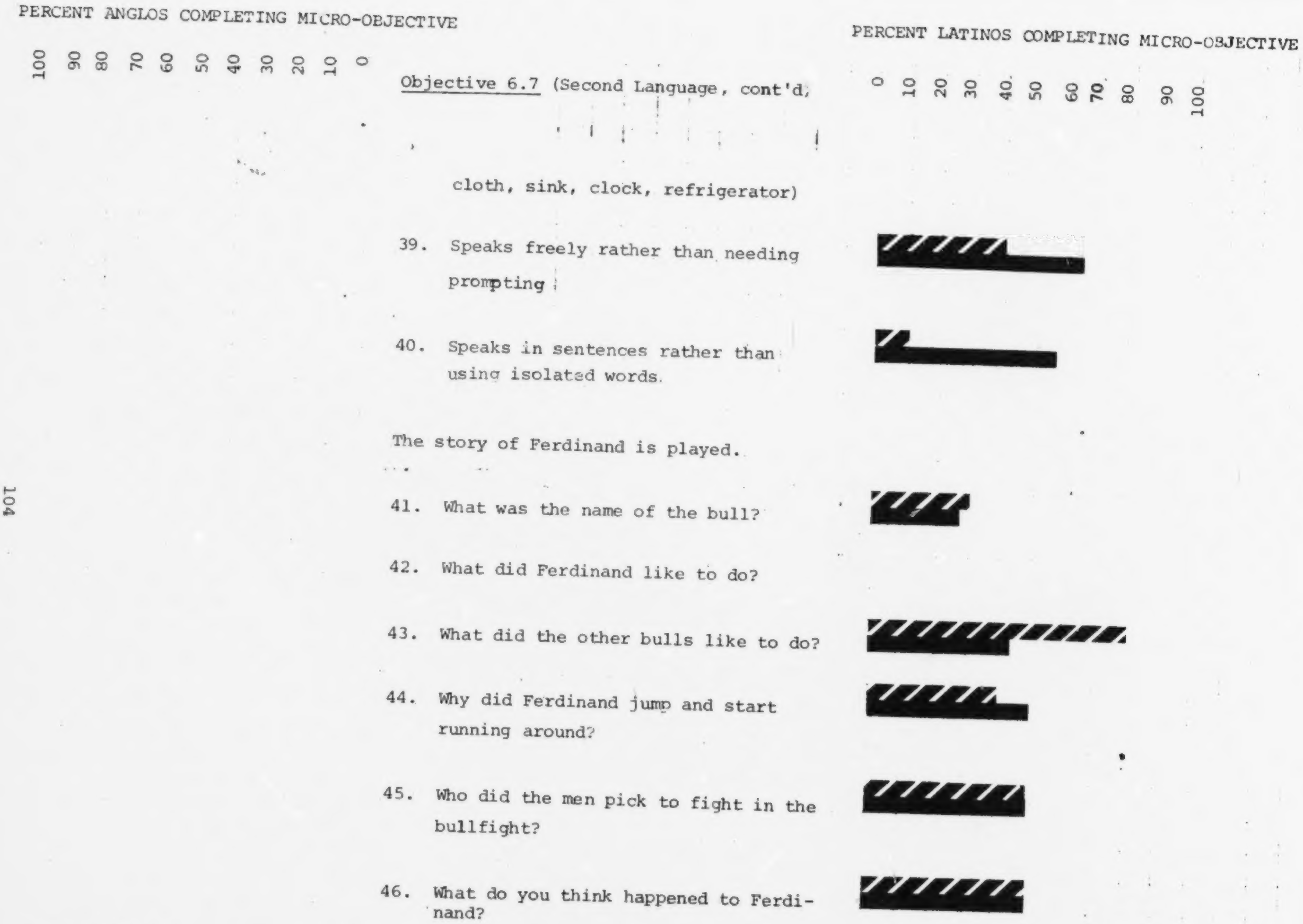
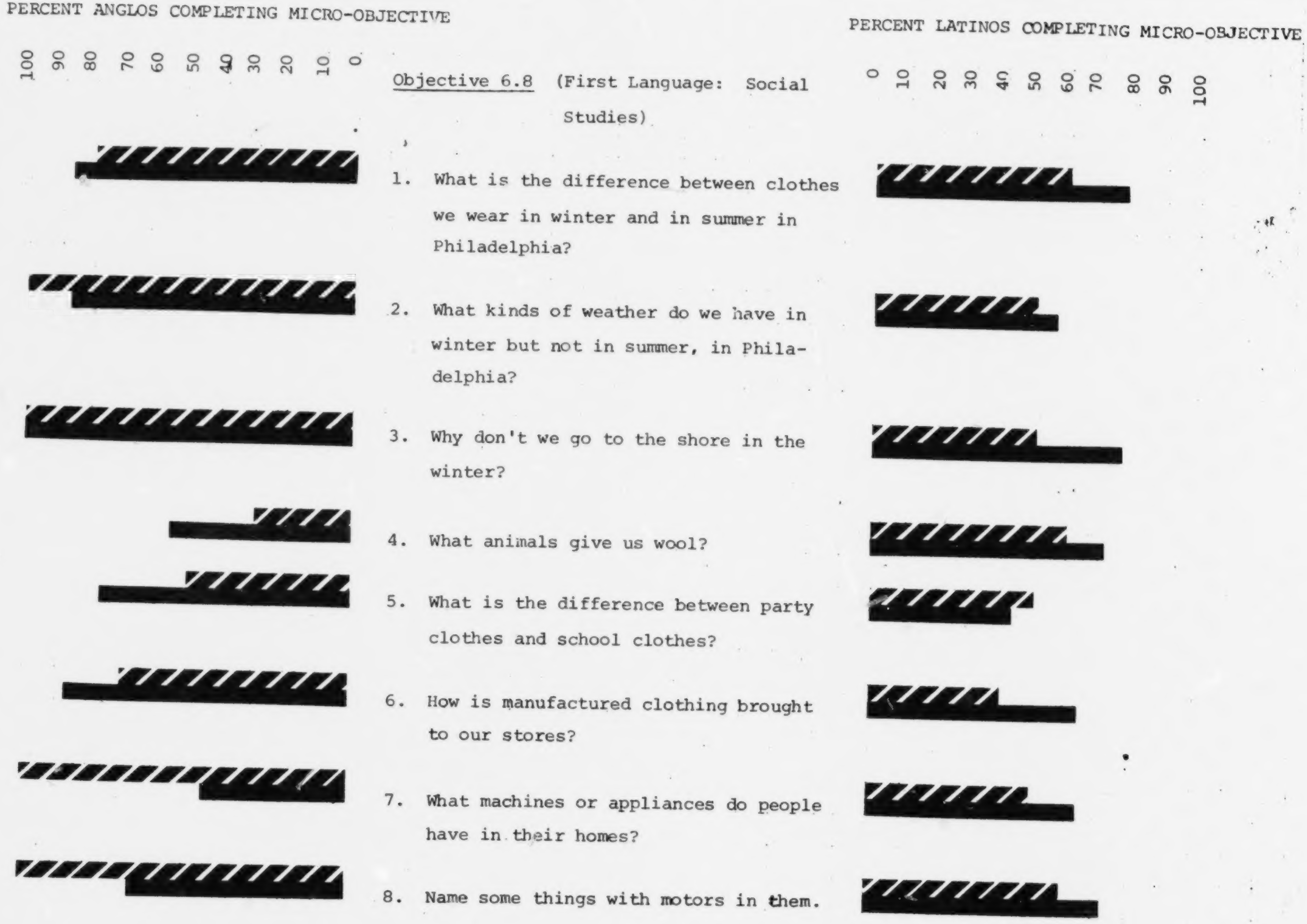


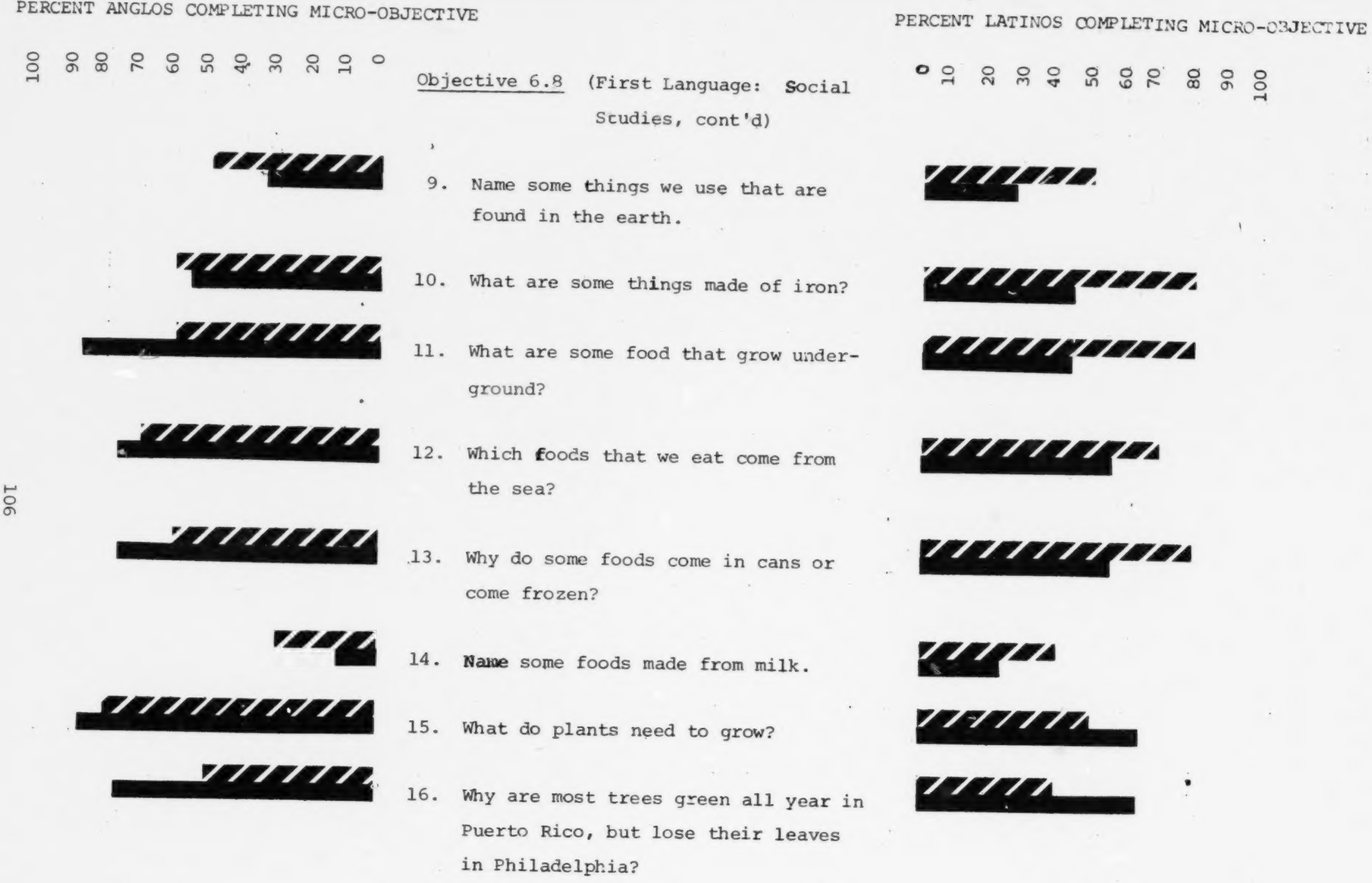
FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 5



Objective 6.8 (First Language: Social Studies)

1. What is the difference between clothes we wear in winter and in summer in Philadelphia?
2. What kinds of weather do we have in winter but not in summer, in Philadelphia?
3. Why don't we go to the shore in the winter?
4. What animals give us wool?
5. What is the difference between party clothes and school clothes?
6. How is manufactured clothing brought to our stores?
7. What machines or appliances do people have in their homes?
8. Name some things with motors in them.

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 6



Objective 6.8 (First Language: Social Studies, cont'd)

9. Name some things we use that are found in the earth.

10. What are some things made of iron?

11. What are some food that grow underground?

12. Which foods that we eat come from the sea?

13. Why do some foods come in cans or come frozen?

14. Name some foods made from milk.

15. What do plants need to grow?

16. Why are most trees green all year in Puerto Rico, but lose their leaves in Philadelphia?

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 7

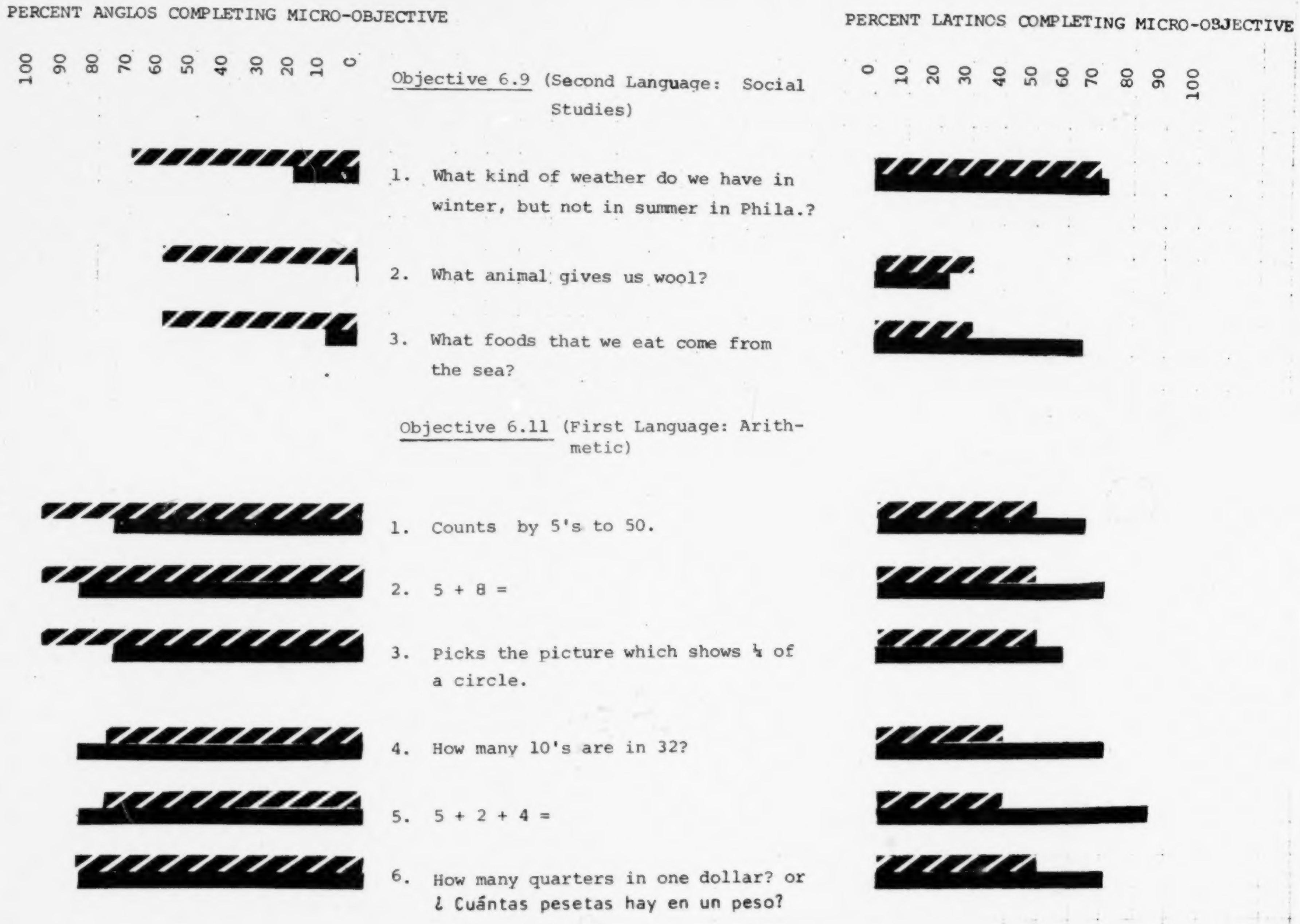


FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 8

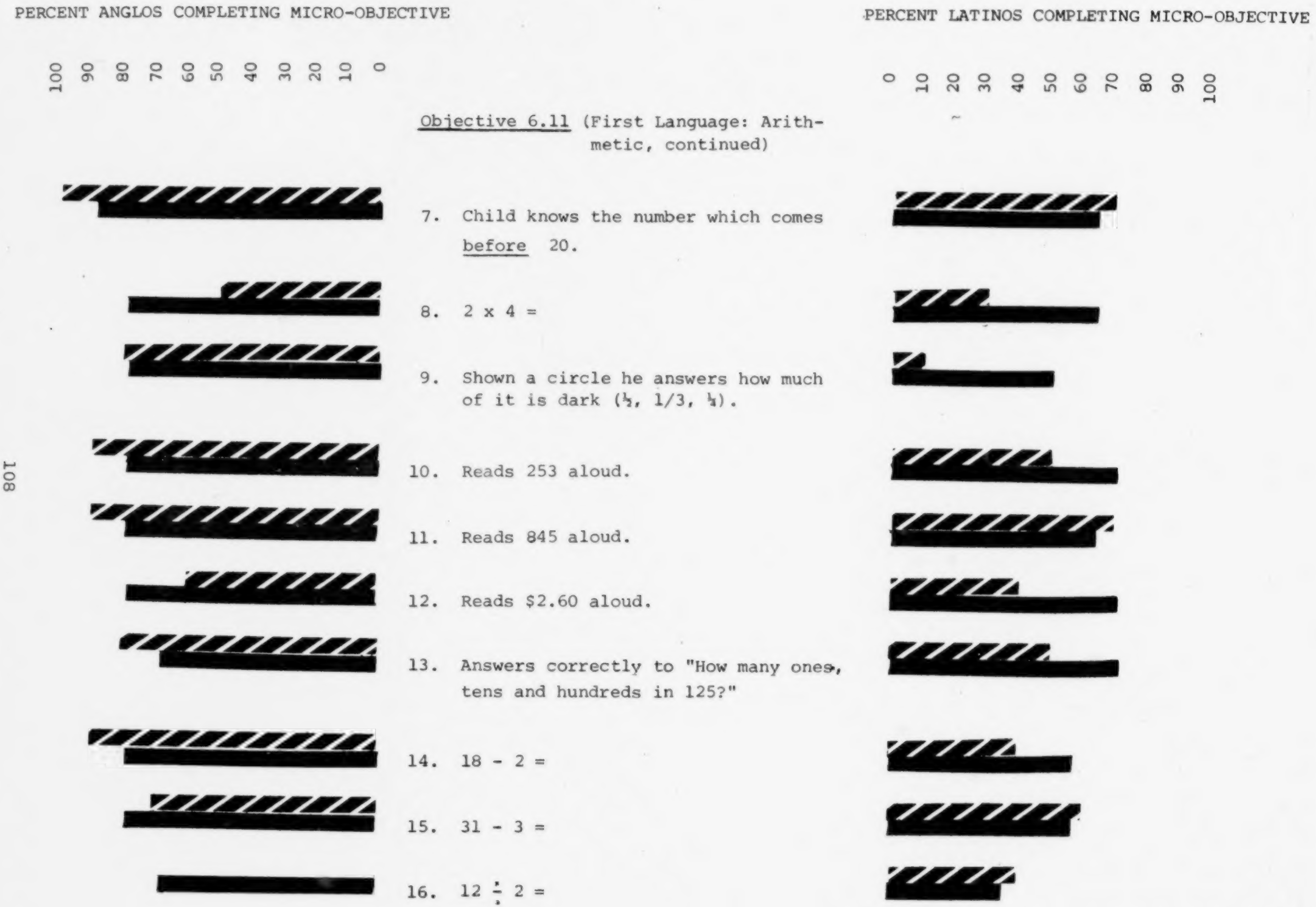


FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 9

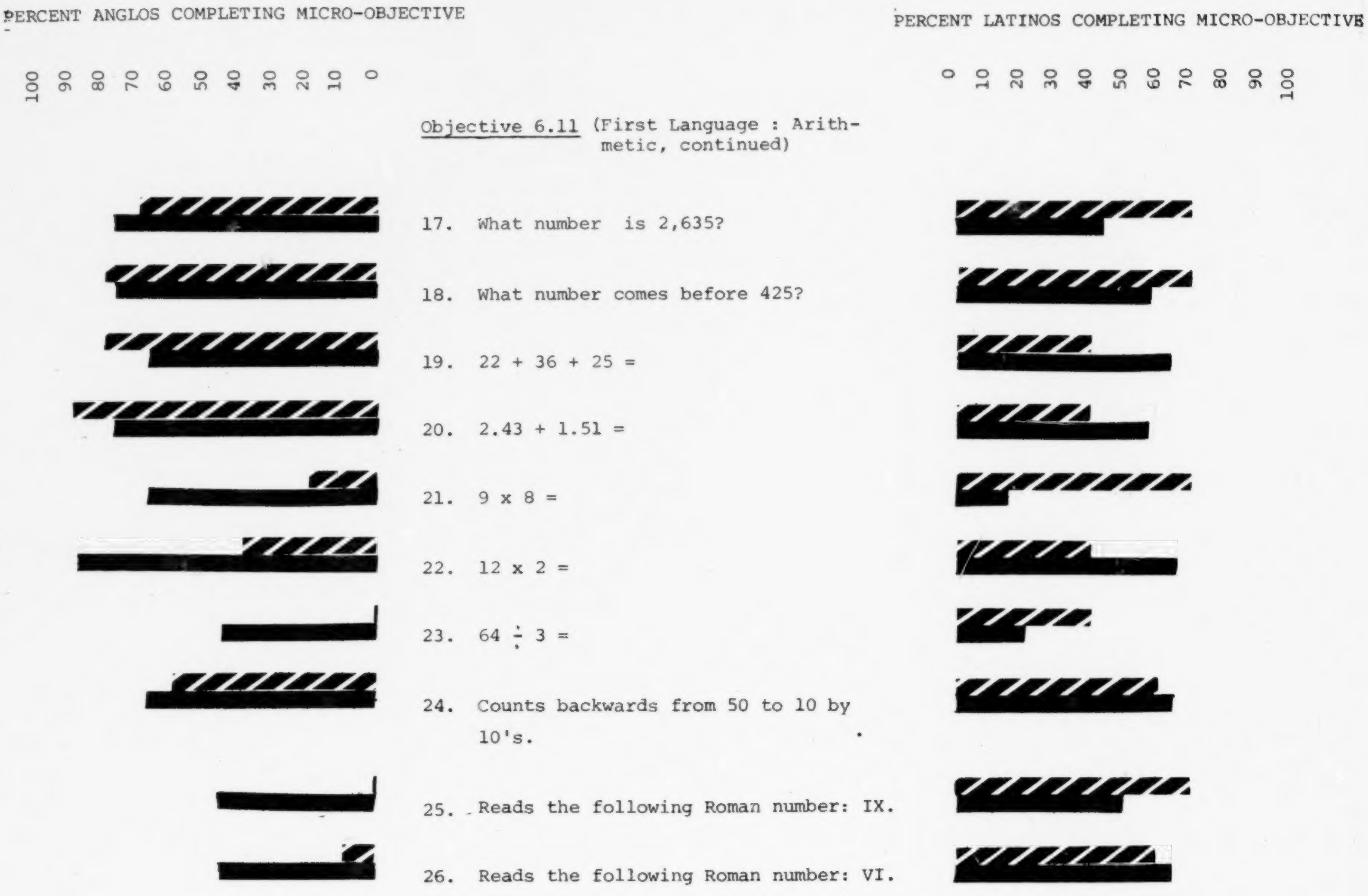
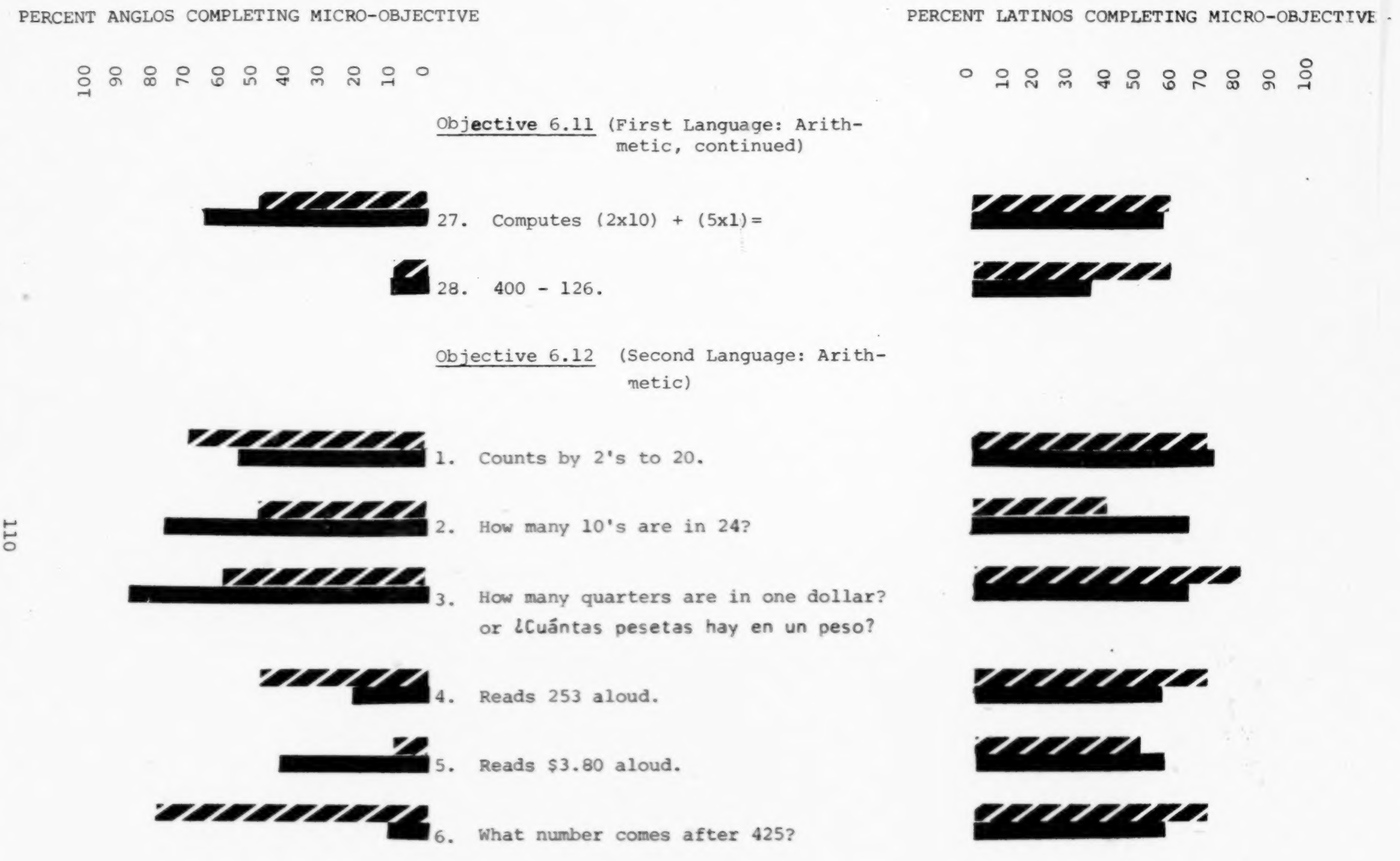


FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 10



Objective 6.11 (First Language: Arithmetic, continued)

27. Computes (2x10) + (5x1)=

28. 400 - 126.

Objective 6.12 (Second Language: Arithmetic)

1. Counts by 2's to 20.

2. How many 10's are in 24?

3. How many quarters are in one dollar?
or ¿Cuántas pesetas hay en un peso?

4. Reads 253 aloud.

5. Reads $3.80 aloud.

6. What number comes after 425?

FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 11

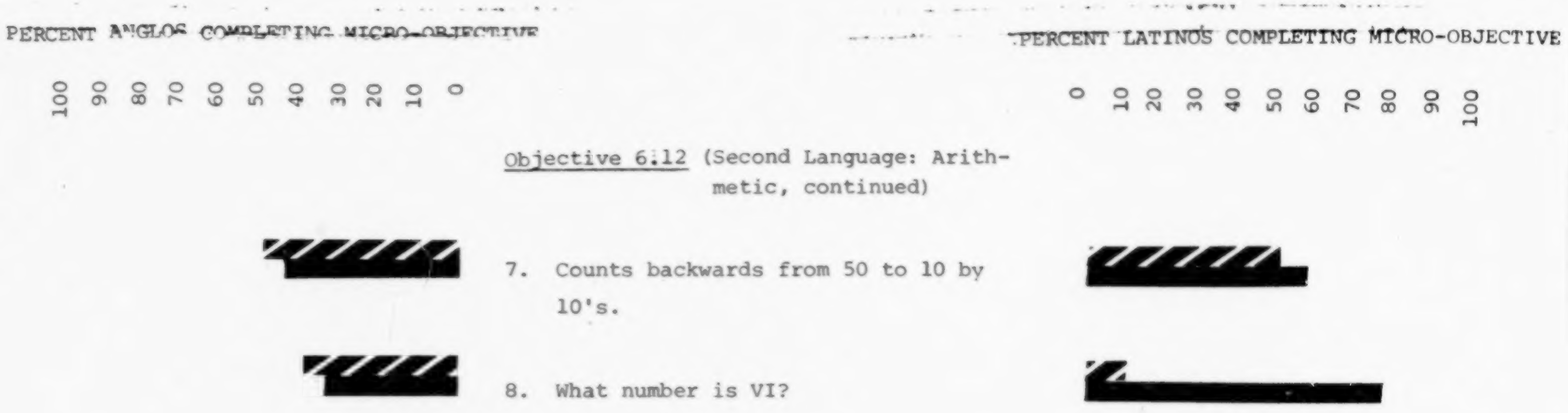


FIGURE 5.5 PERCENT OF THIRD-GRADE STUDENTS OBSERVED CORRECTLY PERFORMING MICRO-OBJECTIVES, PART 12

Appendix 5.1, Log Items for the Special First Grade and the Third Grade Model School Programs.

SPECIAL FIRST GRADE LOG

1. How old are you? (Complete sentence).

2. Where do you live?

3. The child identifies these parts of his body:

   nose

4. teeth

5. fingers

6. feet

7. face

8. arms

9. legs

10. The child will respond to questions concerning the members of his family.
    What is your mother's name?

11. What is your father's name?

12. What is your sister's/brother's name?

13. Shown a picture of the family unit, he identifies and talks about the members; mother, father, grandmother, grandfather.

14. The child will respond to questions concerning his school.
    What school are you in?

15. What grade are you in?

16. What is your teacher's name?

17. The child identifies by means of pictures the following community helpers and describes their roles.
    milkman

18. garbage collector

19. newspaper boy

20. Identifies:

    brown

21. pink

22. Identifies:

gold

23. silver

24. The child responds to the following commands:

Stand up.

25. Sit down.

26. Show me.

27. Get the ______.

28. Run.

29. Skip.

30. Jump.

31. Choosing word pairs that begin with the same letter:

four - five   mama - mono
four - six   mama - libro

32. The child talks about a situation picture.

33. He recites at least 75% of three poems.

34. The child writes his own name.

35. He counts from 1-100.

36. When shown the following coins, the child will identify them:

nickel

37. dime

38. quarter

39. Identifies pint when shown containers.
quart

40. Identifies circle
triangle
square

41. Matches children to chairs
children to pencils

42. Using a clock, the child indicates an hour
half-hour

43. The child tells time when shown a specific hour. e.g., 9'o'clock.

44. When shown a picture the child is able to identify different kinds of weather.

e.g., snowstorm
raining
sunny

45. The child will place the appropriate weather symbol on weather chart.

46. The child will respond to a question concerning the weather. It is cold/hot/warm?

47. The child melts an ice cube and states that it goes from a solid to a liquid.

48. Identifies: turtle

49. frog

50. goat

51. duck

52. bear

53. gorilla

54. spinach

55. cherries

56. daisies

57. When shown a picture of a furnished house, the child identifies the following:

kitchen

58. stove

59. refrigerator

60. mixer

61. sink

62. toaster

63. living room

64. sofa

65. TV

66. lamp

67. rug

68. vacuum cleaner

69. Identifies: dining room

70. table

71. buffet

72. china closet

73. bedroom

74. bed

75. bureau

76. chair

77. bathroom

78. bathtub

79. toilet

80. washbasin

81. When shown pictures of community helpers and means of transportation the child will match them:
e.g., fireman - fire engine

82. milkman - milk truck

83. policeman - police car

Second Language

1. Where do you live? (whole sentence)

2. Shown a picture of a family unit he identifes and talks about the members.

3. When asked the command, Show me _______(your head), the child identifies the following parts of his body:
head

4. eyes

5. nose

6. ears

7. mouth

8. hands

9. feet

10. Identifies the following family members:

mother

11. father

12. sister/brother

13. grandmother

14. grandfather

15. Identifies the following community helpers:

milkman

16. policeman

17. fireman

18. Shown a color chart, the child identifies these colors:

brown
pink
gold
silver

19. The child recites at least 75% of at least one memorized poem.

20. The child recites at least 75% of a second poem.

21. The child recites at least 75% of third poem.

22. The child responds to the following commands.

Sit down.

23. Stand up.

24. Give me.

25. When told to find something with a certain shape, the child is able to point to: a circle

26. a triangle

27. a rectangle

28. a square

29. The child will respond to a question concerning the weather. It is cold/hot, warm, cool, etc.

30. When shown pictures the child identifies the following animals:

cow

31. chicken

32. When shown pictures the child identifies the following animals:

horse

33. turtle

34. frog

35. goat

36. duck

37. Identifies: lettuce

38. spinach

39. cherries

40. daisies

41. When shown a picture of a furnished house, the child identifies the following:

kitchen

42. living room

43. dining room

44. bedroom

45. bathroom

LOG OF PUPIL PERFORMANCE

Third Grade

1. Reading in the Mother Tongue

a. Ask pupil to read aloud the first 10 sentences of the last page he has read in class from his reader.

b. If he reads the sentences perfectly or with less than four errors, go forward five pages, and ask him to repeat the procedure.

c. If he makes five or more errors, go back in the book five pages and ask him to read again.

d. Repeat b or c as needed (until you find the most difficult place at which the pupil can read 10 consecutive sentences with less than four errors) but not more than three times. If, after the third repetition, the place is not found, stop the testing. If the pupil is at the beginning or end of a reader, it may be necessary to change books to complete the process.

1. Place where pupil is reading in class. Book _____________, Page_________

Number of errors made____________.

2. First Repetition: Book __________________, Page ______, No. of errors_____

3. Second Repetition: Book __________________, Page _____, No. of errors_____

4. Third Repetition: Book __________________, Page _____, No. of errors_____

2. Second Language

Repeat the process described in Item 1 above using the reader the pupil is using for his second language, except that the pupil need read only five sentences of each sample. Record the results below:

1. Place where pupil is reading in class.

Book __________________, Page________, No. of errors_________

2. First Repetition: Book ______________, Page______, No. of errors______

3. Second Repetition: Book _____________, Page______, No. of errors______

4. Third Repetition: Book ______________, Page______, No. of errors______

Note If the pupil is reading the Bank Street pre-primers have him start at the beginning of his book and continue reading until the end. Indicate below the number of errors made on each page. If the pupil can not read further, indicate the point where the testing was stopped. Book______________________

Page_____, No. of errors______ | Page_____, No. of errors_____

Page_____, No. of errors______ | Page_____, No. of errors_____

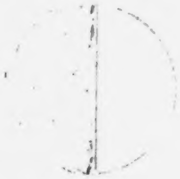
Page_____, No. of errors______ | Page_____, No. of errors_____

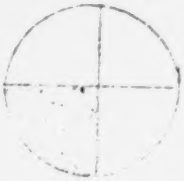
ARITHMETIC, First Language

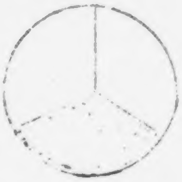
3. Count by 5's to 50. (Level 5)

4. 5 + 8 = _____. (Level 5)

5. Pick the one which shows 1/4 of a circle.







(Level 5)

6. How many 10's are in 32. (Level 5)

7. How many is (Level 5)

$$\begin{array}{r}5\\2\\\underline{+4}\end{array}$$

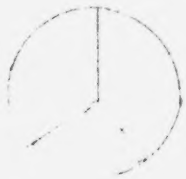
8. How many quarters in one dollar?

or

¿Cuántas pesetas hay en un peso? (Level 5)

9. Ask pupil the number which comes before 20. (Level 5)

10. 2 x 4 = (Level 5)

11.  How much of the circle is dark? ½ 1/3 ¼ (Level 6)

12. Read the following aloud - 253 (Level 6)

13. Read the following aloud - 845 (Level 6)

14. Read the following aloud - $2.60 (Level 6)

15. How many ones, tens and hundreds in 125? (Level 6)

16. (Level 6)

$$\begin{array}{r}18\\\underline{-2}\end{array}$$

17. (Level 6)

$$\begin{array}{r}31\\\underline{-3}\end{array}$$

18. $2\overline{)12}$ (Level 6)

19. What number is 2,635? (Level 7)

20. What number comes before 425? (Level 7)

21. Add 22 (Level 7)
+36
25

22. Add 2.43 (Level 7)
+1.51

23. 9 x 8 = (Level 7)

24. 12 (Level 7)
x 2

25. $3\overline{)64}$ (Level 7)

26. Count backwards from 50 to 10 by 10's.

27. Read the following Roman Number IX.

28. Read the following Roman Number VI.

29. Compute (2x10) + 5x1) =
(accept either 20+5) or 25.

30. 400
-126

ARITHMETIC, Second Language

31. Count by 2's to 20. (Level 5)

32. How many 10's are in 24? (Level 5)

33. How many quarters are in one dollar
or
¿Cuántas pesetas hay en un peso? (Level 5)

34. Read the following number aloud 253. (Level 6)

35. Read this number aloud $3.80. (Level 7)

36. What number comes after 425? (Level 7)

37. Count backwards from 50 to 10 by 10's. (Level 8)

38. What number is this VI? (Level 8)

SECOND LANGUAGE (Both Anglos and Latinos)

39. Identifies family members (mother, father, son, daughter) from a picture.

40. Responds to "Show me your ears!"

41. Responds to "Show me your feet!"

42. Identifies the following community helper (from picture) milkman.

43. Identifies the following community helper (from picture) policeman.

44. Follows the following command. Raise your hand!

45. Follows the following command. Sit down!

46. Child points to object in the shape of a square.

47. Shown a picture, the child identifies a horse.

48. Shown a picture, the child identifies apples.

SECOND LANGUAGE Spanish (Anglos only)

49s Give the child a pencil and say - ¿Tienes un libro? Correct answer:
No, no tengo un libro.

50s ¿Qué tienes? (Answer Tengo un lapiz.)

51s ¿Qué día es hoy? or ¿Cuál es la fecha?

52s Give child five pieces of color paper (red, black, blue, green, white) and
ask - ¿Cuántos papeles tienes? (Answer: Cinco)

53s ¿De qué colores son los papeles? (Rojo, azul, verde, negro, blanco)

54s Show child clock or pictures of clocks reading 9:00 and 3:00. Ask -
¿Qué hora es? Answer: Son las tres, Son las nueve.

55s ¿Cuántas manos tienes?

56s ¿Cuántos dedos tienes?

57s ¿Cuántos ojos tienes?

58s Shown a picture of a sunny scene, the teacher says -
¿Qué tiempo hace? Hace - sol, calor, buen tiempo.

SECOND LANGUAGE English (Latinos only)

49e The pupil is given a pencil, and teacher says "Do you have a book?"
Answer: No.

50e What do you have?
Answer: pencil.

51e "How many pieces of paper do you have?"

52e "What colors are the papers?"

53e How many eyes do you have?

54e How many feet do you have?

55e How many noses do you have?

56e How many fingers do you?

57e Shown a picture of a sunny scene, the teacher asks: "What's the weather?"
Answer: It's warm, hot, sunny.

58e Shown a picture of clocks showing 3:00 or 9:00 o'clock, teacher says "What time is it?" Answer: It's 3 o'clock, It's 9 o'clock.

Kitchen Show pupils the "kitchen" picture.

59e What room is this?

60e Who's in the picture?

61e What is she doing?

62e What do we do in the kitchen?

63e What do you see in the picture?

stove ________
pot ________
table ________
tablecloth ______
cloth ________
sink ________
clock ________
refrigerator ________

64e Child speaks freely. _____
Child needs prompting. _____
(check one)

65e Child speaks in a sentence. _____
Child speaks in isolated words. _____
(check one)

Story The Story of Ferdinand
(Play record up to "So they took him away for the bullfight in a cart.")

66. What was the name of the bull?
(Ferdinand)

67. What did Ferdinand like to do?
(He liked to sit quietly and smell the flowers)

68. What did the other bulls like to do?
(They liked to run, and jump, and fight).

69. Why did Ferdinand jump and start running around?
(He sat on a bumblebee).

70. Who did the men pick to fight in the bullfight?

71. What do you think happened to Ferdinand? (Accept any ending the child gives, as long as it is clear that he understood the story up to the point where the record was stopped).

SOCIAL STUDIES, First Language

72. What is the difference between clothes we wear in winter and in the summer in Philadelphia? (Weather)

73. What kinds of weather do we have in winter but not in summer? (In Phila.) Answer: snow, hail, etc. (Weather)

74. Why don't we go to the shore in the winter? (Weather)

75. What animals give us wool? Answer: sheep (Clothing)

76. What is the difference between party clothes and school clothes? Answer: Party clothes are fancier, etc. (Clothing)

77. How is manufactured clothing brought to our stores? Answer: trucks, trains. (Clothing)

78. What machines or appliances do people have in their homes? Answer: washing machine, vacuum cleaner, TV, radio, etc. (Machines)

79. Name some things with motors in them. (Machines)

80. Name some things we use that are found in the earth. Answer: iron, coal, diamonds, etc. (Earth treasures)

81. What are some things made of iron? Answer: pans, cars, etc. (Earth treasures)

82. What are some foods that grow underground. Answer: potatoes, carrots, peanuts. (Earth treasures)

83. Which foods that we eat come from the sea? Answer: fish, clams, shellfish, etc. (Sea)

84. Why do some foods come in cans or come frozen? Answer: To keep them fresh. (Foods)

85. Name some foods made from milk? Answer: cheese, butter, etc. (Foods)

86. What do plants need to grow? Answer: sun, water, soil (Plants)

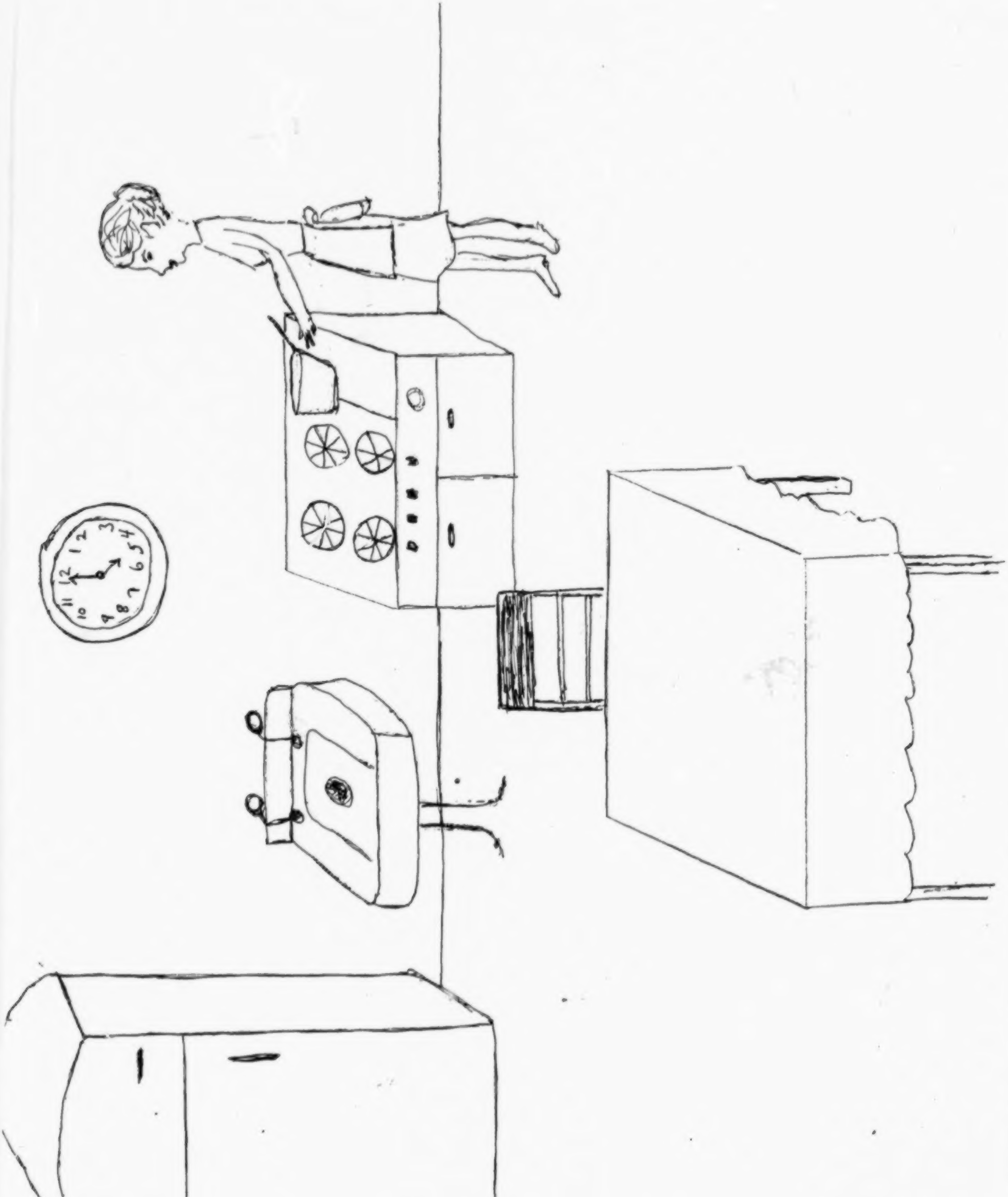
87. Why are most trees green in Puerto Rico, but lose their leaves in Philadelphia? Answer: Climate difference (Plants)

SPOKEN LANGUAGE, Social Studies

88. What kinds of weather do we have in winter, but not in summer in Phila? (Weather)

89. What animal gives us wool? (Clothing)

90. What foods that we eat come from the sea? (Sea)



STUDY 6. PREKINDERGARTEN PUPILS' READINESS FOR AN ALL-DAY KINDERGARTEN PROGRAM IN MODEL A

The Prekindergarten Readiness Test is an instrument designed to assess the effectiveness of the prekindergarten level of the Model A school program in readying pupils for an enriched kindergarten program. The test measures reading- and number-readiness skills. Some of these skills related to objectives which appeared in the proposal for the first year of the program:

Objective 1.1 (First Language) included microobjectives related to color identification.

Objective 1.2 (Number Skills) included shape discrimination and counting activities.

In addition to these, the prekindergarten test includes letter-discrimination activities added to the program after the objectives were written.

Procedures

Program

No major changes were implemented in the prekindergarten program in the 1971-1972 school year. Pupils were again taught by a team of teachers, one Anglo and one Latino. Pupils were instructed in their mother tongue by the teacher who was the native speaker of the language, but received second-language instruction from the other teacher. The pupils worked in ethnically homogeneous groups for part of the day and ethnically mixed groups for the remainder. Teaching focused on oral skills, reading- and number-readiness concepts, and social and emotional development. The program included activities which were similar to those required by all test items; however, direct practice with the test was avoided.

Evaluation

Sample. All pupils on roll in the Model A prekindergarten were included: 37 Anglos and 34 Latinos.

Instrument. The Prekindergarten Readiness Test was described in detail in the first year's evaluation report (Offenberg, 1970). It contains items which require discrimination of shapes and letters, identification of colors, use of simple number concepts, and ability to make marks with a crayon.

Administration. Each pupil was tested individually by a supervisor in the program. The testing was conducted in the pupils' mother tongues during May, 1972.

Analysis. As this instrument's properties have not been studied in previous evaluations, an item analysis was conducted. The mean score for each of the ethnic groups was computed, and a comparison of this year's pupil performance with last year's was made by means of an analysis of variance. The 1970 data were excluded from the variance analysis because individual scores for that year were no longer available.

Results

Item Analysis

Results of the item analysis of the test are shown in Table 6.1. The analysis was based on the results of testing of 34 Latinos and 19 Anglos. The remaining Anglo pupils had to be excluded because one of the testers neglected to mark the pupil responses to the individual items and indicated only a total score.

As can be seen on the table, the first six items, dealing with shape and letter discrimination, were mastered by virtually all pupils (94.5% to 98.2%), with a fairly strong tendency for pupils who do well on these items to do well on the test as a whole. Correlations of the items with total score were between .57 and .59, all statistically significant at the .01 level of confidence.

The number-concept and numerical operation items (numbers 7 through 17) were more difficult, with about half the pupils succeeding on the typical item. All items correlated significantly (at least at the .05 level) with the total score, with correlation coefficients ranging from .30 to .57.

The color-discrimination items were mastered by most pupils, but the overall results did not correlate so highly with total score as did other items. Between 80% and 94% of the pupils completed each item correctly, but the correlations with total score ranged between .24 and .38. All but one of these correlations were statistically significant and that one just missed being significant. Kuder-Richardson 20 reliability was good, and other test properties were approximately at the anticipated levels.

Pupil Performance. Overall performance of pupils on the Prekindergarten Readiness Test was very similar to the performance of pupils the previous year, with the typical pupil scoring 17.5 items or 76% of the test correct. As shown in Table 6.2, there were small differences in the scoring of the two ethnic groups last year and this year, but the overall results were virtually identical. Neither group's performance was significantly different from that observed last year.

Discussion

The item analysis shows that the prekindergarten test reflects

TABLE 6.1

ANALYSIS OF PREKINDERGARTEN READINESS TEST ITEMS, SHOWING CORRELATION OF ITEMS WITH TOTAL SCORE

Item	Percentage of Pupils Succeeding	Point-Biserial Correlation
Form Discrimination (Correct answer underlined)		
1. F K E B̲	94.5	.51**
2. △̲ ○ ▭ ◊	96.4	.55**
3. ○ □̲ ◊ △	96.4	.58**
4. 3 1 2̲ 4	98.2	.59**
5. 1 3̲ 5 2	94.5	.51**
6. B C A̲ E	94.5	.51**
Make number of marks shown		
7. 2	94.5	.57**
8. 3	78.2	.46**
9. 5	49.1	.47**
10. 6	36.4	.38**
Find the box with four dots		
11.	50.9	.51**
How many dots in the circle?		
12. 1 2 3̲	81.8	.30*
13. 9 6̲ 5	50.9	.40**
14. 5̲ 4 6	49.1	.44**
15. 2 3 4̲	54.5	.31*

TABLE 6.1 (Continued)

ANALYSIS OF PREKINDERGARTEN READINESS TEST ITEMS, SHOWING CORRELATION OF ITEMS WITH TOTAL SCORE

Item	Percentage of Pupils Succeeding	Point-Biserial Correlation
How many dots in the circle?		
16. 5 7 6	56.4	.45**
17. 9 4 8	56.4	.36**
Show the color indicated		
18. Blue Orange Green	88.1	.27*
19. Purple Yellow Red	94.5	.38**
20. Blue Red Yellow	90.9	.24
21. Green Yellow Red	80.0	.38**
22. Blue Red Orange	92.7	.34**
23. Blue Orange Purple	83.6	.30*

Summary

Number of items on the test	23
Mean number of pupils succeeding on each test item	76.4 %
Kuder-Richardson 20 Reliability	.84
Test Mean	17.78
Variance	17.06
Standard Deviation	4.13
Standard Error of Measurement	1.61

*Statistically significant at the .05 level.
**Statistically significant at the .01 level.

TABLE 6.2

COMPARISON OF SCORES ON PREKINDERGARTEN READINESS TEST

Year	Anglo		Latino		Total	
	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
1972	37	16.8	34	18.2	71	17.5
1971	33	18.3	37	17.0	70	17.7

Analysis of Variance

Item	MS	df	F	p
Anglo Pupils				
Treatment	39.0		1.55	NS
Error	25.2	68		
Latino Pupils				
Treatment	21.3	1	1.16	NS
Error	18.3	69		

criterion-referent approach, in that most items were completed correctly by more than half the pupils and many items were completed correctly by more than 80% of the children. The most difficult items were clearly those in the number skill area. It is not known whether the difference in achievement on reading readiness items and on number readiness items was a reflection of the tests administered or of the teaching procedures in the two areas. It does suggest that examination of the teaching procedures used for the number concepts may be desirable.

The overall pupil performance suggests that the project management can expect about the same number of pupils to be ready for the all-day kindergarten experience in 1972-1973 as there were in 1971-1972.

Study 7. KINDERGARTEN PUPILS' READINESS FOR THE FIRST GRADE, INCLUDING A MEASURE OF THE IMPACT OF THE ALL-DAY KINDERGARTEN

The Philadelphia Readiness Test has been used as a criterion measure for assessing reading-readiness skills and number-readiness skills in all three years of the Bilingual Program's operation (Offenberg, 1970, 1972). Performance Objective 2.7 in the original proposal stated that both Anglo and Latino pupils' Performances would exceed that of two critical groups--all pupils in the city in the Spring 1969 testing, and pupils enrolled in the schools which merged to become Potter-Thomas in the same testing. The former group had a mean score of 20.1; the latter group, 20.9.

During the first year of operation, both Anglo pupils tested in English and Latino pupils tested in Spanish met this objective, the Latino pupils scoring higher than had pupils in any school in the city during the base-line year. During the second operational year, results were mixed in the Model A program, with **Anglo** pupils achieving their objective, but with Latino pupils scoring below both criteria. During that second operational year, a kindergarten class, consisting solely of Spanish-speaking children, was established as part of the Model B component. The performance of this group was well above the criterion for the objective. An all-day kindergarten was also begun in Model A which consisted of select pupils with prekindergarten experience. This group performed well above the objective's criterion.

During the third operational year of the program, all classes operating in the Model B component were at higher grades than the kindergarten, but the regular and all-day kindergartens were continued in Model A. Therefore, this study focuses on the Model A component alone.

In addition to assessing the effectiveness of the program in teaching pupils the reading- and number-readiness skills designated in the objectives, this study undertakes an assessment of the effectiveness of the all-day kindergarten program in speeding up the skills acquisition of the brightest alumni of the prekindergarten component.

Objective

Product objective 2.7 stated that the mean scores of both Anglo and Latino pupils in the kindergarten bilingual classes would exceed the citywide mean of 20.1 and at least equal the Potter-Thomas School mean of 20.9. These means were for the base-line year of 1969, the year before the Bilingual Program began.

Procedures

Program

According to the proposal, all pupils were to be given experiences in which they would have opportunity to practice letter and shape discrimination and practice elementary numerical operations. The products of these activities were described in detail, but the specific methods used for instruction were not. According to the supervisors, teachers did not substantially alter the methods used to teach the number- and reading-readiness skills from those of the preceeding year. In the regular kindergarten, emphasis was on readiness skills. In the all-day kindergarten, emphasis was on readiness and beginning reading skills. The specific microobjectives around which the teachers built their classroom activities are detailed in Study 5. One team of teachers (regular kindergarten) supplemented the regular materials drawn from the Miami Curricumun Development Center, also described in that study.

Evaluation

Instrument. The Philadelphia Readiness Test and the Spanish directions prepared for it were described in detail in the first year's evaluation report (Offenberg, 1970). The test requires pupils to copy shapes, match letters and words, and perform simple counting and numerical operations up to ten. There is not a one-to-one correspondence between test items and program microobjectives, but each item can be viewed as a sample or an extension of an objective in the program.

Instructions for the test, which has been used extensively in the Philadelphia schools, were originally in English. For project purposes, a Spanish translation of the test instructions was prepared. In the first year of program operation, Latino pupils were randomly assigned to groups who were tested using the English and Spanish instructions. It was found at that time that the Spanish instructions enhanced the performance of Latino pupils. Since that time, Anglo pupils have been tested in English, and Latino pupils have been tested in Spanish.

Population and Administration. During the 1971-1972 school year, all pupils enrolled in bilingual kindergarten programs were part of the Model A component at the Potter-Thomas School. Seventy-seven Anglos and 83 Latinos were enrolled in the regular kindergarten classes; 20 Anglos and 21 Latinos were enrolled in all-day kindergarten programs. According to teachers, this group included all children on roll during the April 15-May 15 testing period. All but 14 of these children were on roll prior to December, 1971. As the scores of these children were not different from those of pupils who had been in the school the entire year, both groups were combined in all the group statistics presented.

The population of the kindergarten component consists of pupils enrolled in the program by their parents. As kindergarten is not mandatory in the Philadelphia schools, this group may to some extent be regarded as atypical: parents had to choose that their children be enrolled. However, the same atypicality also affects the base-line groups, as base-line children were enrolled in kindergartens prior to program implementation under the same conditions.

The all-day kindergarten group is more select. It consists primarily of children who were successful in the prekindergarten program during 1970-1971. They were assigned to classes on the basis of high scores on the prekindergarten tests administered at the end of that school year. Thye were in about the top two-thirds on that test and were recommended by their teacher. A few talented pupils who had not prekindergarten experience were also assigned to the all-day kindergarten on the basis of teacher recommendation.

Tests were administered by teachers in small groups of five or six pupils, usually in two sittings. Each pupil's test was administered in the pupil's mother tongue. The supervisors reported that they spot-checked teachers administering the tests and they appeared to be following the test instructions. Teachers subsequently scored the tests. The evaluation staff reviewed the tests and the scoring (a) to assure that the tests appeared to be the work of the pupils themselves and (b) to check the scoring. Three tests were rescored after it was observed that the teacher had made an error.

Analysis. Descriptive statistics (mean and standard deviations) were obtained to determine whether the objective was met. Analysis of covariance was used to determine whether the all-day kindergarten enhanced participant performance to levels beyond that which could be anticipated by the pupils' ability. In this analysis, the previous year's prekindergarten test score was used as a covariate.

Results

As shown in Table 7.1, both Anglo and Latino pupils in the program exceeded the level of performance specified in the objective, with mean scores of 23.2 and 22.7 respectively. A mean score of 20.9 was necessary to exceed the objective's criterion. As anticipated, both Anglo and Latino all-day kindergarten pupils scored higher than children in the regular kindergarten, Anglos scoring 24.5 and Latino scoring 25.3. These latter scores are close to the ceiling of the test. This and the fact that the standard deviations were smaller for these groups than they were for the "regular" groups suggested that the degree of difference between the regular and all-say kindergarten groups might have been underestimated by the lack of more complex test items. Check of the individual test scores suggests that this was so: 19 of the 41 all-day kindergarten pupils either had perfect scores or made only one error.

Table 7.2 shows an analysis which attempted to examine whether the all-day kindergarten component enhanced scores on the Philadelphia Readiness Test. As it was known that pupils in the two groups were different before they entered kindergarten, an analysis of covariance was computed for those children who had been in prekindergarten the previous year. This permitted the use of prekindergarten readiness test scores as the covariate. The results in table 7.2 show that there were no statistically significant differences once the prekindergarten results were taken into account. This indicated that at least as far as the Philadelphia Readiness Test is concerned,

Table 7.1 Performance of All Pupils in the Model A Component on the Philadelphia Readiness Test.

Group	Number of Pupils	Mean Score	Standard Deviation
Anglo Pupils			
Regular Kindergarten	83	22.8*	4.0
All Day Kindergarten	20	24.5*	3.8
Anglo Total	103	23.2*	4.0
Latino Pupils			
Regular Kindergarten	77	22.1*	4.7
All Day Kindergarten	21	25.3*	2.1
Latino Total	98	22.7*	4.5
Program Total	201	23.0*	4.3

*Indicates that group exceeded the criterion of both baselines. Maximum test score is 27; preprogram city mean was 20.1; preprogram Potter-Thomas mean was 20.9.

the all-day kindergarten did not produce pupil performance beyond that produced by the regular kindergarten once pupil ability was taken into account. However, examination of the group means, in Table 7.2 suggests that the lack of significant differences may be accounted for by the same lack of difficult items noted earlier, as the all-day kindergarten group mean was very close to the test maximum.

Discussion

The results showed that reading- and number-readiness skills have progressed beyond the levels of performance mandated by Product Objective 2.7. Anglo performance was higher than it had been in any previous year. Latino performance was nearly as good as Anglo performance and approached the outstanding results obtained for this group during the first year of program operation.

Table 7.2 Analysis of Difference in Performance of Last Year's Prekindergartens in Regular and All-Day Kindergarten Using Spring 1971 Prekindergarten Readiness-Test Scores as Covariate.

Group	N	PK Test	Phila. Readiness Test
Anglo			
All-Day Kindergarten	17	21.9	25.2
Regular Kindergarten	8	14.4	22.8
Latino			
All-Day Kindergarten	17	20.5	25.6
Regular Kindergarten	9	12.8	23.1

Analysis of Covariance

Item	SS	df	Ms	F	P
Test of Equality Regression					
Within cells	231.20	43	5.38		
Regression	14.05	3	4.68	0.87	<.46
Analysis of Covariance					
Ethnic Group	6.01	1	6.01	1.1	NS
Program	2.05	1	2.05	0.4	NS
Ethnic Group x Program	0.02	1	0.02	0.0	NS
Within cells	245.02	46	5.30		
Regression	30.08	1	30.08	5.7	<.02

While there is no clear explanation for these improvements, project supervisors were able to offer some hypotheses. Two new teachers (an Anglo working in the all-day kindergarten and a Latino working in a regular kindergarten class) replaced two members of last year's kindergarten staff. In addition to having taken part in the 1971 Summer Institute, the Spanish-speaking teacher had had experience in teaching in Cuba prior to coming to the United States. The Anglo teacher also was experienced. Furthermore, two classes also began to use materials prepared by the Miami Curriculum Development Centers as supplements. It is felt that these materials may have contributed to the high level of performance observed.

It has already been noted that the failure to find statistically significant differences in the performance of prekindergarten alumni who were in either the regular or the all-day kindergarten might be attributed to problems in instrumentation. It should be noted, however, that pupils in the all-day kindergarten group not only were exposed to readiness skills but also were introduced to reading itself. (See Study 9.) Taken together, these results suggest that the all-day kindergarten program may be a worthwhile undertaking despite the lack of statistically significant differences in the observed performance of the pupils.

Study 8. STANDARDIZED TESTING OF MODEL SCHOOL PUPILS

Over the first two years of program operation, the major thrust of the evaluation effort has been to provide information which might be useful for further project development and improvement. In short, the evaluation approach was formative. In the third year it was felt that some summative evaluation, in the form of standardized testing and program base-line comparisons should be included in the evaluation. For the Model School program, this approach meant administration of standardized tests for which there were meaningful base-lines: selected subtests of the Stanford Achievement Test Primary Battery II, The Iowa Tests of Basic Skills, and the Test de Destrezas Básicas en Lectura. They were used to assess performance in the mother tongue of all second- and third-grade pupils, and second-language performance of third-grade Latinos in the Model School program components.

During the second year of program operation, this kind of testing was begun when second-grade Anglo pupils were examined in English with the Stanford Achievement Test. This was undertaken in order to assure that participation in a bilingual classroom program was not interfering with this group's acquisition of English reading skills, with the results showing that Anglo second-grade pupils of Model A were ahead of similar pupils prior to the start of the bilingual program.

Procedures

Program

All three tests to be used in this study measure reading skills in the pupil's mother tongue. The methods for teaching these skills in the Model A program are described in detail in the second-year evaluation report (Offenberg, 1972) and Study 9 of this report. It is sufficient to say that the Latino pupils in the program show the cumulative results of their study of Laidlaw materials, and Anglo pupils show the cumulative result of their work with the Bank Street materials. (The Lippincott reading series was used as a supplement to the Bank Street materials).

The Model B program for Latino second graders is substantially the same as that used for the Model A program, but that of the Anglos is not. The Anglos' study of most of their mother-tongue skills, including those measured by the Stanford Achievement test, were planned and taught *independently* of the control and supervision of the *Let's Be Amigos* project management. The approach used was phonics-based and was developed by Behavioral Research Laboratories.

Some comment is required about the reading programs of the base-line groups with whom comparisons were made. The base-lines for English reading skills came from data gathered in the Potter-Thomas School in years before the program reached that grade level. That of the second-grade group consisted of pupils tested in 1970, during which year students were exposed to an eclectic reading program; i.e., teachers planned activities based on (a) the pupils in their classes and (b) the teachers' own preferences. The base-line of the third-grade group was gathered in 1971 after the first year of a local-district-wide program operated by Behavioral Research Laboratories, which emphasized Phonics and decoding skills and included activities (such as poster-making contests) which would generate enthusiasm among staff and pupils.

The base-line group for data on the Spanish-language Test de Destrezas was obtained from a 1968 citywide testing program (Desing, 1968) in which all pupils in the second through eighth grades who,in their teachers' judgment were Spanish-speaking were examined in that language. At the time of this testing, the school system was not offering any instruction in reading in that language.

Model A third-grade Latino pupils were thought to have a sufficiently good mastery of English language skills to be ready for a testing in that language with a first-to-second-grade level test. The participants in this program had studied aural-oral English exclusively until the last half of the second grade or the beginning of the third grade. At that time reading was introduced using the Bank Street series of readers.

Evaluation

The procedures used in gathering the evaluation data for this study were similar regardless of the instrument or target group.

Instruments. The Stanford Achievement Test Primary Battery II was used to examine the reading skills of three groups: second-grade Anglos of the Model A component, second-grade Anglos of the Model B component, and third-grade Latinos of the Model A component. Four subtests--Word Meaning, Sentence Meaning, Spelling, and Word Study Skills--were administered.

The Iowa Tests of Basic Skills--Vocabulary, Reading, Language, and Arithmetic subtests and the Composite score--were used to assess the performance of third-grade Anglo pupils in their mother tongue (Model A only; Model B did not have third-grade classes in 1971-1972).

Latino second-grade (Model A and Model B) and third-grade (Model A) pupils were examined on a Spanish reading test, Test de Destrezas Básicas en Lectura. The instrument provides scores for Words and Letters (recognition), Word Meaning, and Comprehension, and a Composite score.

Method. All testing was conducted by classroom teachers. To assure correct, fair administration of the tests, supervisors visited the classrooms during test administration in Model A, and a research staff member assisted the teachers in testing Model B. All tests were administered within the two-week period which ended in early May. This time period is used also for citywide testing of pupils.

In all cases the testing was given according to test publishers' instructions and scored in accordance with the keys the publishers provided.

Subjects. All pupils in the classes which composed the second grade of Model A and Model B and the third grade of Model A were to be examined in this assessment. The number of pupils enrolled in each grade and the percentage of pupils tested (April, 1972) were as follows:

Model A:	Anglo second grade,	58	(67%)
	Anglo third grade,	58	(96%)
	Latino second grade,	83	(87%)
	Latino third grade,	99	(95%)
Model B:	Anglo second grade,	29	(93%)
	Latino second grade,	41	(95%).

The number of pupils who actually took each test or subtest are shown in the tables in the Results section of this report. The discrepancies are due to absenteeism. According to teachers, no pupils were excluded from the testing for other reasons. It was not clear, at the time of this writing, why only 67% of the second-grade Anglos were tested.

Analysis. All analyses in this study were of the "analysis of variance" type. As the data analyses proceeded, the authors revised their idea of the best way to handle them. As a result, there are some variations within the study; specifically, in later portions, multivariate analysis of variance was substituted for several univariate analyses. In these analyses, pupil performance was compared with that of base-line groups. There were all historical base-lines; i.e., they were for pupils who were similar in ethnic background and believed to be similar in social class and school experience to those pupils served by the program. The specific groups used are shown in the Results section.

Results

Performance of Model A and Model B Anglo Second-Grade Pupils on the Stanford Achievement Test

Group means, grade equivalents of the means, and standard deviations of the test scores of first-grade pupils on four subtests of the Stanford Achievement Test are shown in Table 8.1, which also includes variance analyses of the outcome. The base-line group used in this analysis was all Anglo pupils attending Potter-Thomas School in 1970, the year before the Bilingual Program reached the second grade.

As can be seen, the raw-score means of both Model A and Model B pupils are greater than that of the preprogram base-line group on all four tests, with Model A pupils consistently superior to those of Model B. Some of the gains of Model B were, in fact, so small that the scores were in the same "grade equivalent" range as were those of the base-line group.

Three analyses were performed on the data to answer three distinct questions. The first of these, Base-line vs. Combined Model A and Model B sought to determine whether performances of pupils in the Model School programs were superior to those of the base-line group. Overall, for three subtests--Paragraph Meaning, Spelling, and Word Study Skills--the results clearly were in favor of the program, but the outcome on Word Meaning was marginal (F - 2.30, df = 1/105, $p < .10$).

The second analysis, Base-line vs. Model A, responded to the question whether the performance of Model A pupils was superior to that of the base-line group. As can be seen in the table, there were clear-cut differences on all four subtests. (F ranging from 4.43 to 31.03, and probabilities ranging from less than .04 to less than .001) with the strongest differences in Spelling (one-half year of grade equivalence) and Word Study Skills (six-tenths of a year of grade equivalence).

The third analysis examined whether the performance of pupils in Model B was superior to that of the base-line group. Analysis showed that program pupils were significantly ahead of the base line in three skill areas--Paragraph Meaning, Spelling, and Word Study Skills-- and marginally ahead in Word Meaning. However, examination of the grade equivalents suggests that at least two of these were probably not meaningful, despite the fact that they exceeded chance expectations. Specifically, the Word Meaning and Paragraph Meaning performances were less than one month of grade-equivalent score ahead of those of the base-line.

Performance of Anglo Model A Pupils on the Iowa Tests

Table 8.2 shows the results of comparison of the Iowa test performance of Anglo Third-grade Model A pupils with that of the 1971 Potter-Thomas base-line group. As can be seen, Model A pupils' performance was superior to that of pupils in the base-line group on all four subtests and in the Composite score. The analyses of variance show that on one subtest--Vocabulary--Model A pupils were clearly superior (F = 10.7, df = 1/145, $p < .01$). On two subtests Language Skills and Arithmetic --marginal levels of significance ($p < .10$) were obtained. For only one subtest--Reading--were the results nonsignificant. When the scores are combined into the publishers' Composite, analysis shows a clear-cut difference of 2.5 months' grade equivalence in favor of the Model A Group (F = 6.69, df = 1/135, $p < .01$).

Table 8.3 shows comparison of four subgroups of Model A third-grade Anglo pupils: those who had been enrolled in the program for more than two years, those who had been enrolled for one to two years, and those admitted during the early and later parts of the year being evaluated.
As can be seen from the table, there is no clear pattern of Iowa test scores which relates to length of exposure to the program; and none of the analyses of variance revealed a statistically significant difference.

Table 8.1 Performance of Anglo Pupils in the Second Grade of Model B on the Stanford Achievement Test, Reading Subtests.

Subtest	Base Line (N = 42)			Model A (N = 39)			Model B (N = 27)		
	$\bar{X}$	Gr. Eq.	S.D.	$\bar{X}$	Gr. Eq.	S.D.	$\bar{X}$	Gr. Eq.	S.D.
Word Meaning	6.1	1.7	3.8	8.0	1.8	4.1	7.4	1.7	4.6
Paragraph Meaning	8.6	1.6	6.3	12.3	1.7	6.7	9.1	1.6	6.9
Spelling	2.1	1.5	2.1	5.4	2.0	4.3	3.3	1.7	5.1
Word Study Skills	16.5	1.4	6.3	26.5	2.0	7.1	18.2	1.5	10.5

Multivariate Analyses of Variance of Raw Scores*

Item	F	df	$p <$
Base-line vs. Combined Model A and Model B			
Multivariate F	4.38	8/204	.001
Word Meaning	2.30	1/105	.10
Paragraph Meaning	3.48	1/105	.03
Spelling	7.66	1/105	.001
Word Study Skills	16.94	1/105	.001
Base-line vs. Model A Alone			
Multivariate F	8.19	4/102	.001
Word Meaning	4.43	1/105	.04
Paragraph Meaning	6.23	1/105	.01
Spelling	15.05	1/105	.001
Word Study Skills	31.03	1/105	.001
Base-line vs. Model B Alone			
Multivariate F	8.70	4/102	.001
Word Meaning	2.96	1/105	.08
Paragraph Meaning	6.86	1/105	.01
Spelling	13.83	1/105	.001
Word Study Skills	33.08	1/105	.001

*All three analyses were taken from three different sets of orthogonal comparisons. They were created to answer the specific questions raised in the text. It was not possible to include all three in one data analysis. The author is aware that, strictly speaking, a single analysis and post-hoc tests would be more conservative, but it was felt that that approach would have been conservative for the purpose at hand. The reader will note that the degrees of freedom are the same for the error variance regardless of the number of cases actually compared in an analysis. This is because in orthogonal comparisons, the error variance is pooled from all cells of the experiment.

Table 8.2 Comparison of Iowa Test Scores of Model A Third-Grade Anglos With Scores of Anglos in Base-line Group.

Subtest	Model A		Base Line (Potter-Thomas)		df	F	P
	N	Mean (GE)[1]	N	Mean (GE)			
Vocabulary	56	2.70	91	2.34	1/145	10.7	$<.01$
Reading	54	2.52	92	2.35	1/144	2.11	NS
Language Skills	56	2.53	90	2.33	1/144	3.43	$<.10$
Arithmetic	54	2.77	88	2.54	1/140	3.36	$<.10$
Composite	52	2.59	85	2.34	1/135	6.69	$<.01$

[1] Grade-equivalent scores were used in this analysis. All pupils were tested with Level A. Univariate F tests were computed.

Table 8.3 Comparisons of Bilingual Program (Model A), Third-Grade Anglo Pupils of Varying Lengths of Exposure to the Program.

Subtest	Length of Experience in Bilingual Program								df	F[1]	p
	More Than Two Years		Between One and Two Years		Between One-half and One Year		Less Than One-half Year				
	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$			
Vocabulary	29	2.62	15	2.68	9	2.70	6	2.55	3/55	0.4	NS
Reading	29	2.52	15	2.45	9	2.60	7	2.38	3/56	0.2	NS
Language Skills	29	2.51	15	2.42	11	2.70	7	2.65	3/51	0.4	NS
Arithmetic	28	2.80	15	2.58	10	2.89	7	2.83	3/53	0.4	NS
Composite	28	2.58	15	2.54	7	2.74	6	2.42	3/52	0.3	NS

[1] Univariate F tests were computed, using grade equivalents.

Second- and Third-Grade Latino Performance on the Test de Destrezas Básicas en Lectura

Table 8.4 shows the performance of Latino second- and third-grade pupils in the Model School programs on the four subtests of the Test de Destrezas Básicas en Lectura. In both the second and third grades and on all subtests, pupils were superior to the base-line group of Latino pupils in the Philadelphia schools in 1968, with the mean overall score showing a superiority of 13 percentile points in the second grade and 17 percentile points in the third grade.

The analysis of variance showed that the differences on all subtests were statistically significant.

Table 8.5 shows that there was not a significant difference in the Composite scores between pupils in Model A second grade and Model B second grade. It also shows that analysis of variance of scores grouped by length of exposure to bilingual education did not yield statistically significant differences. It should be noted, however, that there is a trend for each group with lesser amounts of exposure to the program to have a lower composite score than the groups with greater exposure, an outcome one could expect in only four times per hundred by chance. This suggests that analysis of a different type might detect differences.

Latino Third-Grade Pupils Tested in English

Latino pupils in the third grade were tested in English on the four subtests of the Iowa test, in order to describe their performance in that language after their entry into the Bilingual Program. Results, shown in Table 8.6, indicate that Latino pupils in the third grade are working at a level typical of English-speaking pupils nationally at the end of the first grade. Table 8.7 shows the influence of length of time in the Bilingual Program on each of the subtests. As can be seen, no systematic, statistically significant differences were found.

Discussion

The findings of this study show that performance of students in the Bilingual Program was generally better than that of base-line groups. At no point was it poorer.

For Latino pupils the gains in the measured Spanish reading skills have been substantial (13 percentile points in the second grade, 17 percentile points in the third). This is not unexpected because the base-line data were for pupils not receiving instruction in Spanish, while Latino program participants were receiving such instruction. Nevertheless, the fact that gains were strong and overall pupil performance (Composite score) was above the 40th percentile of pupils in an all-Spanish environment suggests that the program can succeed in developing performance of pupils in their mother tongue under these conditions. It should be noted that in the third-grade results there is an interesting pattern in both the base-line and the program outcomes. When compared with norms of Puerto Rican pupils, performance on recognition of Words and Letters (which requires little comprehension) is much better than performance on the Word Meaning and Comprehension subtests. This pattern may provide clues to

Table 3.4 Comparison of Model School Second- and Third-Grade Pupils with the Base Line of Latino Pupils in Philadelphia Schools in 1968

Grade and Subtest	Base Line (N = 266)			Models A & B (N = 110)		
Second Grade	$\bar{x}$	Percentile[1]	SD	$\bar{x}$	Percentile	SD
Recognition of Words and Letters	43.04	35	15.27	48.70	45	16.20
Word Meaning	8.56	30	4.85	11.61	40	6.59
Comprehension	6.06	36	4.95	7.28	40	7.75
Composite	57.49	32	20.49	67.86	45	26.41
	Base Line (N = 332)			Models A & B (N = 94)		
Third Grade	x	Percentile	SD	x	Percentile	SD
Recognition of Words and Letters	49.76	32	13.25	58.39	61	8.48
Word Meaning	9.39	19	8.08	14.25	36	6.51
Comprehension	7.19	21	7.13	10.14	30	6.95
Composite	69.93	27	57.94	82.95	44	19.37

Multivariate Analysis of Variance

Grade Level:	F	df	p<
Multivariate	13.81	4/795	.001
Recognition of Words and Letters	49.87	1/798	.001
Word Meaning	4.41	1/798	.04
Comprehension	9.39	1/798	.002
Composite	18.00	1/798	.001
Program			
Multivariate	20.88	4/795	.001
Recognition of Words and Letters	39.12	1/795	.001
Word Meaning	51.06	1/798	.001
Comprehension	14.93	1/798	.001
Composite	12.29	1/798	.001
Interaction of Grade Level and Program			
Multivariate	1.47	4/795	.008
Recognition of Words and Letters	1.72	1/798	NS
Word Meaning	2.66	1/798	NS
Comprehension	2.66	1/798	NS
Composite	0.16	1/798	NS

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[1] Percentiles are for second- and third-grade rural pupils in Puerto Rico, in the Spring semester.

Table 8.5 Test De Destrezas Analyses Designed to Assess Subordinate Questions.

Comparison of Model A and Model B
Second-Grade Latinos--Composite Scores

Model	N	$\bar{X}$	Percentile
A	73	67.3	43
B	39	66.9	43

	MS	df	F	P
Groups	11.6	1	.02	NS
Error	743.2	110		

Comparison of Model A Third-Grade Latino Pupils
with Varying Amounts of Experience in the
Bilingual Program--Composite Scores

Length of Experience in Program.	N	$\bar{X}$
More than two years	22	70.7
One to two years	47	69.8
One-half to one year	38	64.5
Less than one-half year	5	45.6

Source	MS	df	F	P
Length of time in Program	1065	3	1.46	NS
Error	727	108		

Table 8.6 Third-Grade Latino Pupil Performance in English Reading and Spelling-Skill Subtests of the Stanford Achievement Test.

Subtest	N	$\overline{X}$	G.E.	SD
Word Meaning	70	9.07	1.8	4.80
Paragraph Meaning	73	13.47	1.8	6.29
Spelling	5.3	4.26	1.9	5.50
Word Study Skills	73	20.01	1.6	7.56

Table 8.7 Mean Scores on the Stanford Achievement Test of Latino Pupils with Differing Amounts of Experience in the Program.

Subtest	Length of Experience in Bilingual Program							
	More Than Two Years		Between One and Two Years		Between One-half and One Year		Less Than One-half Year	
	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
Word Meaning	27	9.4	19	9.2	14	8.6	9	8.7
Paragraph Meaning	27	13.9	20	12.6	16	14.2	10	13.7
Spelling	24	4.6	11	5.8	10	2.9	8	2.3
Word Study Skills	26	20.9	21	18.6	14	19.9	10	21.3

Analysis of Variance[1]

Subtest	F	df	P
Word Meaning	0.11	3/65	NS
Paragraph Meaning	0.24	3/69	NS
Spelling	0.86	3/49	NS
Word Study Skills	0.43	3/67	NS

[1] Univariate F tests for each measure were computed.

the areas where special emphasis is needed if Latino pupils are to develop good mastery of Spanish while living on the Mainland.

Results of administration of the Stanford Achievement Test for Model A Anglos once again showed gains were made when compared with the base line of pupils who previously studied at Potter-Thomas School, replicating the results of the previous year. The results for Model B, showing small but statistically significant gains (often less than one month of grade equivalence) need attention. It was originally thought that the Model B Anglo participants would be like those of Model A as they come from similar schools and a similar community, making the Potter-Thomas base line an adequate one. Examination of class lists shows that this was not a good assumption, because the Model B Anglo second grade includes many (about one fourth) Spanish-surnamed children. Checking with program supervisors showed that there was a tendency to place Latino pupils with "good" mastery of English in the classes of Model B Anglos because it would result in more contact with Spanish than if they had been placed in regular classes. However, it also resulted in an "Anglo" group of pupils for whom English was not truly the first language.

The Iowa test data, which were used to compare Anglos at Potter-Thomas with the previous years' pupils, also deserve special comment. The lack of clearly significant differences in areas other than vocabulary is probably due to the fact that the base-line group had also been involved in a special program, the District Five Reading Program, conducted by Behavioral Research Laboratories. The fact that there were strong trends (Language Skills and Arithmetic) and one clear-cut significant difference (Vocabulary) in favor of the Bilingual Program should be regarded as a gratifying outcome.

Examination of the performance of third-grade Latino pupils on an English reading test designed for the elementary grades can be viewed only in descriptive terms, because of the lack of a base line. The study showed that after about eight-tenths of a year of instruction in English, pupils were reading like English-speaking pupils in a national sample with about the same length of experience in reading, i.e., pupils at the end of the eighth month of the first grade. If this rate of acquisition can be maintained, the Latino pupils should ultimately be able to read well in the both languages.

One outcome worthy of further study is the relationship between length of exposure to the Bilingual Program and performance. It is not surpising that little difference was found for Anglo pupils. The results of the study of Latino pupils reading in Spanish suggest that there may be a clear-cut relationship which was undetected by the analysis of variance used but which might be detected by a correlational study. It is expected that such a study would show that the more exposure there was to bilingual education the stronger the Spanish performance would be.

Equally interesting is the lack of any pattern in the English performance of the Latinos as a function of program exposure. Most new Latino admissions to the Bilingual Program came from other Philadelphia schools, not directly from a Spanish-speaking educational environment. The fact that the performance of the new admittees (mostly with two years of reading experience in an all-English environment as well as one of English in the Bilingual Program) did not differ from that of long-term participants (with one or one and one-half years of English reading) suggests that the program can accomplish in a year or a year and a half that which other schools require a much longer period of time to accomplish. During subsequent evaluations it would be desirable to test directly the inferences drawn from these relationships between length of program participation and performance.

STUDY 9. CRITERION-REFERENT READING TESTS IN THE MODEL A AND MODEL B PROGRAMS

As we noted in Study 8, a major change in the evaluation of the Model School program was initiated during the third operational year--a greater number of standardized tests was used to assess pupil performance.

In order to conduct this standardized testing, the limited evaluation resources demanded a cutback in the evaluation in some other area. This cutback occurred in the assessment of reading using criterion-referent approaches. Therefore, in Spring 1972 assessment of reading using these approaches were confined to those groups and grade levels where the project staff felt that standardized testing was inappropriate. As a result, criterion-referent approaches were used in the all-day kindergarten and first-grade for measurement of first-language reading skills as well as with second-grade Latinos and third-grade Anglos for measurement of second-language skills.

Two tests of the criterion-referent battery were used--Word Calling and Pictures. The Word Calling test measures sight vocabulary and was used with all groups; the Picture test measures meaning of words and was used with first-grade pupils learning to read their first-language.

The evaluation of the 1970-1971 school year showed that pupil performance on the Picture subtest was highly erratic. It was believed that this was due to departure from prescribed methods of test administration. To remedy this situation, during the current year all testing was carried out by supervisory and evaluation staff members in Model B, and by teachers with direct supervision by the program supervisors in Model A.

Procedures

Program

In the Model A program, pupils in the all-day kindergarten began to learn to read about midyear. Anglo pupils were introduced to the skills with the Chandler preprimer program while Latino pupils began to learn to read using the Laidlaw series in Spanish. In first through third grades, pupils began to learn to read using the Laidlaw series in Spanish. In first through third grades, pupils used the Bank Street Readers in English and the Laidlaw Readers in Spanish. First graders began reading in their mother tongues, second-grade Latino pupils began reading in their second language, and by third grade Anglo and Latino pupils were reading in both their first and second languages.

In Model B the reading instruction of Latino pupils was under direct project control but the instruction of Anglos was not. Therefore, evaluation of the reading of Model B Anglos was not included in the criterion-referent testing. In Model B, second-language reading was not formally introduced to either the Anglo or the Latino groups. This component used the Miami curricular materials. The Language Arts strands of these materials included activities which provided readiness skills for the Latinos learning to read in their mother tongue. The Lippincott reading materials were used in Model A and B as supplementary texts during the year for instructing pupils to read English.

Objectives

All-day kindergarten, mother tongue. No objectives were specified for this level. Any achievement obtained is beyond that mandated by the proposal.

First grade, mother tongue. Objective 3.7 stated that 80% of the children would be able to recognize 90% of the sight vocabulary of the preprimer and primer (first primer in Bank Street) of the reading series in use--Bank Street for Anglos, Laidlaw for Latinos.

Second grade, mother tongue. Objective 5.1 stated the following distribution would be obtained by the end of the second grade: Level 2, Part 1 of the readers would be completed by the 50% of the pupils; Level 1 would be mastered by 30%; the remaining 20% of the pupils would show mastery of the preprimer level.

Second grade, second language. Based on the success in introducing second-language skills to a few pupils in the second operational year, all Latino pupils in Model A during 1971-1972 were introduced to reading in their second language. (Although Anglo pupils who began to read did equally well, it was felt that the majority of Anglo pupils did not have sufficient mastery of Spanish to warrant introducing them to this broad-based reading program).

Third grade, first language. Objective 6.1 specified the distribution of pupil reading skills expected. Pupils were evaluated informally in the "Log Study," (see Study 5) and with standardized test (see Study 6).

Third grade, second language. Objective 6.2 specified the distribution of pupil scores expected in the second language for both Anglos and Latinos. Pupil performance was checked in the Log Study (see Study 5). In addition, Anglos were tested in the second language in this study. The anticipated performance was 60% of the Anglos able to read Level 1 at 90% criterion and 40% at the primer level to that criterion.

Latino pupils seemed capable of more complex performances. They were tested in their second language using the standardized English-language test normally used with second-grade Anglo pupils. (see Study 6).

In all cases word-calling criterion-referent tests were specified for assessing the criterion. The picture tests were still regarded as experimental.

Evaluation

Instruments. The instruments used in this study were developed in 1970-1971 for the evaluation of this program, and were described in considerable detail in the evaluation report for that year (Offenberg, 1972).

Chandler Readers. Anglo pupil performance on this preprimer material used in the all-day kindergarten was measured by a word-calling test. It consists of ten words selected from the vocabulary introduced in the first five booklets of this series, Swings, Slides, Trucks and Cars to Ride, Bikes, and Supermarket. In the testing pupils were asked to read the words aloud.

Bank Street Readers. The mastery of English reading skills was measured by two of the four criterion-referent tests for these materials--Word Calling and Pictures. The first of these sampled vocabulary words appearing in the Bank Street readers. Children being tested were required to read the words aloud. The test was designed for individual administration. The second test, Pictures, consisted of pictures which portrayed the meaning of concepts taught in the reader. The pupil was to match one of three words with each picture. The picture test was designed for group administration. Both tests of the Bank Street battery were designed to assess reading of texts from the preprimers through Level 3.1. The specific readers were In the City People Read, Around the City, Uptown Downtown, My City, Green Lights Go, and City Sidewalks. Detailed descriptions of the tests appeared on Page 91 of the second-year evaluation report. The word-calling and picture tests of the Bank Street Series were administered to Anglo first-grade pupils. Latino second graders were examined with the word-calling test for these readers.

Laidlaw Readers. Two subtests based on the Laidlaw readers in Spanish were also used, one a word-calling and one a picture test. In format these tests were similar to those prepared for Bank Street readers. The tests themselves were described in detail in the 1970-1971 evaluation report. The tests measured skills in the Laidlaw readers through the 2.1 level. The books sampled were Camino de la Escuela, Aprendemos a Leer, Nuestros Amigos, and Del Campo al Pueblo.

Latino all-day kindergarten pupils were tested on word-calling of the preprimer materials. Latino first graders and Anglo third graders were tested on the word calling. Latino first graders were tested on the picture subtest as well.

Method. Two different procedures were used. The word-calling tests were administered by project-evaluation and supervisory staff members. The picture tests were administered by teachers, with supervisors monitoring the process insofar as that was possible. Program-evaluation staff monitored those classrooms where the teacher appeared to have departed from the procedure for testing the previous year.

Subjects. In each of the Word Calling tests, a sample of one-third of the pupils in the grade levels tested was drawn at random by members of the evaluation staff. The one exception to this was the all-day kindergarten, where all pupils on roll and present during the testing period were examined.

The picture tests were administered to all pupils in each grade level present on the day when the testing was conducted.

Analyses. Means, standard deviations and other descriptive statistics were computed in order to compare pupil performances with criteria indicated in the objectives stated in the proposals. In addition, the picture subtest results were subjected to item analyses in which the point-biserial correlations of items with total score, Kuder-Richardson reliability coefficients, and other test-pertinent data were obtained.

Results

Word Calling Tests

The all-day kindergarten pupils, as noted earlier, began to read preprimer texts in their mother tongue. Although no reading objectives were ever stated for this group, pupils were able to read this level of material by year end. As can be seen in Tables 9.1 and 9.2, typical Anglo and Latino pupils were able to call about 70% of the vocabulary of the texts to which they were exposed.

Table 9.1. Performance of Anglo All-Day Kindergarten Pupils on the Chandler Reading Test (Model A)

Mean Score	7.0
Standard Deviation	2.7
Text Maximum	10
Criterion	None set
No. of Pupils Observed	17
Percentage of Enrolled Pupils Observed	100%

Table 9.2. Results of Testing All-Day Kindergarten Latino Pupils on the Preprimer Items of Laidlaw Word-Calling Test

Mean Score	7.0
Standard Deviation	2.5
Text Maximum	10
Criterion	None set
No. of Pupils Observed	22
Percentage of Enrolled Pupils Observed	100%

The performance of Anglo pupils in the first grade on the Bank Street Word-Calling tests is shown in Table 9.3. As can be seen only 32% of the pupils met the criterion. According to the objective, 80% of the pupils should have met it. The performance of the Latino first graders in the Laidlaw text was also less than that stated in the objective. As shown in Table 9.4, only 28% of those in Model A and 15% of those in Model B were able to complete the word-calling test at the level of the criterion.

Table 9.3. Testing of Anglo Model A First-Grade Pupils on Word-Calling Test for Bank Street

Mean Score	20.31
Standard Deviation	11.43
No. of Items on Test	69
No. of Items Applicable to Objective	20
Criterion (90% of previous line)	18
No. of Pupils Observed	51
Percentage of Observed Pupils Meeting Criterion	32

Table 9.4. Performance on Model A and Model B Latino First-Grade Pupils on Word-Calling Test for Laidlaw (Spanish) Readers

Item	Model A	Model B
Mean Score	13.42	10.45
Standard Deviation	12.33	10.63
No. of Items on Test	40	40
No. of Items Applicable to Objective	20	20
Criterion (90% of previous line)	18	18
No. of Pupils Observed	64	47
Percentage of Enrolled Pupils Observed	38	39
Percentage of Observed Pupils Meeting Criterion	28	15

Second-grade Latino pupils were tested in word calling in English. No objective with a specific criterion appears, but the results shown in Table 9.5 indicate that the second-grade Latino pupils were able to read 24.83 words, which would place them about midway through the Level 1 reader in the Bank Street series.

Anglo pupils in the third grade were similarly tested in their second language. According to the proposal 60% of the pupils ought to have been able to call words in the vocabulary appearing in the Level 1 text. Results obtained in this testing (shown in Table 9.6) were far below

Table 9.5. Second-Language Performance of Model A Second-Grade Latinos Reading Bank Street

Mean Score	24.83
Standard Deviation	18.76
No. of Items on Test	69
No. of Items Applicable to Objective	Not Specified
No. of Pupils Observed	24
Percentage of Enrolled Pupils Observed	27%

Table 9.6. Second-Language Performance of Model A Third-Grade Anglo Pupils on Laidlaw Word-Calling Test

Mean Score	11.86
Standard Deviation	10.51
No. of Items on Test	40
No. of Items Applicable to Objective:	
Primer	20
Level 1	30
No. of Items Applicable to Objective at 90% Criterion:	
Primer	18
Level 1	27
Percentage of Pupils Meeting Criterion:	
Primer (100% anticipated)	27%
Level 1 (60% anticipated)	9%
No. of Pupils Tested	22
Percentage of Enrolled Pupils Tested	34%

that level, with only 9% of the Anglo pupils able to perform at that criterion. The proposal also stated that all Anglo pupils should have been able to read the preprimer and primer. The result was that 27% of the pupils tested could read it.

Picture Tests

Bank Street picture-test performance of Anglo first-grade pupils. The entire Bank Street picture test was completed by 98 of the 168 pupils on roll in the first grade (58%). It was expected that all Anglo first-grade pupils not absent on the testing dates would be examined. It is not clear at present why so many pupils were excluded, since with normal absences about 80% of the pupils should have taken the test. Overall the item analysis of this test provides the impression that it is fairly reliable. The Kuder-Richardson 20 reliability coefficient was .67 and most items had medium-value point-biserial correlations with total score. They ranged from .04 to .45, [illegible] most in the upper half of that range.) The typical item was answered correctly by 47% of the tested pupils.

The mean score on the test was 14.1 items correct. Six items of the test were culled directly from the preprimer and primer levels. As there were 18 items on the test and three choices per item, the average score of who could complete each item in the recommended texts and guess at the remainder would be 10 items. The 14.1-item mean reflects achievement beyond that ascribable to guessing and mastery of the items of the preprimer and primer levels. The teacher of these materials ascribed this outcome to the fact that most alternate (incorrect) choices had different initial consonants. The teacher felt that when they could guess the appropriate word for the picture, the pupils could look for a word with the same initial consonant and thereby select the correct choice, without being able to read the words completely.

Laidlaw picture test with Latino first graders. Two hundred two first-grade Latino pupils completed this test--133 from Model A and 69 from Model B. This represents 79% of the Model A roll at year end and 86% of the Model B roll at year end. However, 20 Latino pupils, all in Model A, were examined on only one half of the test, reducing the Model A pupils to 113. Results of the item analysis, based on responses of the remaining 182 pupils, showed that 10 of the 12 test items had positive point-biserial correlations, eight of which were .30 or above. The two items which had negative correlations with total score correlated about -.30, but a large proportion of pupils answered the items correctly (over 65% in each case). The average correlation of items was .31; the typical item was completed correctly by 54% of the pupils; the Kuder-Richardson 20 reliability was .79; the mean score was 8.35 items; and the standard deviation was 2.99 items. Six of the 12 items came directly from the materials studied. If the pupils could complete each of these items and guessed on the remainder, the results would be just about those obtained. However, as was the case with the Bank Street picture test, the difficulty of the items did not appear to be clearly dependent on the level of the reading texts from which they came. The mean was about one more item correct in Model B than in Model A. The mean of Model A was 7.97 items correct; that of Model B was 8.97 items correct. Examination of the individual scores showed that there was a fair number of pupils with perfect scores (about one-fourth) and a fair number of pupils (about one-eighth) who made the same response (e.g., always chose the middle one of the three choices) in each group.

Discussion

The results of this study must be examined in the context of other reading assessments in the program. However, the outcomes suggest that greater attention needs to be given to reading in the Bilingual program if pupil achievement is to match that indicated in the program's proposal and objectives. The three groups where no criteria for reading were specified (Anglo all-day kindergartners in the mother tongue, Latino all-day kindergartners in the mother tongue, and Latino second graders in the second language) all appear to have turned in respectable performances.

In other parts of the program studied using a criterion-referent approach, the results are a complex mixture of outcomes which, taken together, represent performance below that of the objectives of the program. Relatively few Anglo and Latino first graders met the first-language reading objective set for them--the mean pupil performance was at about the level specified for the minimum pupil performance. As was the case last year, the variability of pupil performance (as shown by the standard deviations) was large when compared to the mean, pointing to skewed distributions in which many pupils had relatively low scores and a few pupils had very high ones.

The analyses of the picture subtest suggest that rather than measuring a more complex skill than word recognition, it measured a less complex skill--recognition of initial consonants. While it may be useful for that purpose, it did not seem to be a good tool for measuring understanding of the written word as originally intended.

The increase in use of standardized tests in the program suggested that at the earliest skill levels reading may be best measured through the simple word-calling tests and more complex skills may be best measured by published tests.

Study 10. CRITERION-REFERENT TESTING OF SECOND- AND THIRD-GRADE ARITHMETIC SKILLS IN THE MODEL SCHOOL PROGRAM

During the 1970-1971 school year, criterion-referent tests in arithmetic were developed in order that second-grade pupil performance could be described in terms related to the Philadelphia Levels of Mathematics for the Primary Years (School District of Philadelphia, 1968). Results of administration of these tests appeared in Study 8 of last year's evaluation report (Offenberg, 1972). They showed that Anglo pupils were more spread-out than anticipated, with many pupils scoring higher than stated in the objective and many pupils scoring lower than expected. In contrast, all Latino pupils scored above anticipated levels.

This study is in part a replication of the one conducted last year. A new set of arithmetic problems was developed for assessing pupil performance in the third grade, which permitted the evaluation approach used in the second grade of 1970-1971 to be used at the third-grade level this year.

As there has never been a formal evaluation of the criterion-referent arithmetic test, an item analysis was also added to this year's-study of pupil performance.

Objectives

Second Grade (Model A and Model B). When examined with a brief test sampling materials appearing in the texts, pupils will be at the following levels of the Philadelphia arithmetic curriculum:

- At least 30% of pupils will be doing satisfactory work at about Level 6.
- At least 60% (cumulatively 90%) of the pupils will be doing satisfactory work at about Level 5.
- Not more than 10% will be working at about Level 4.

Third Grade (Model A). When examined with a brief test sampling materials appearing in the texts, pupils will be at the following levels of the Philadelphia arithmetic curriculum:

- At least 30% of the pupils will be at Levels 8 and 9 (Level 9 is a review).
- At least 20% (cumulatively 50%) of the pupils will be at least Level 7.
- Not more than 50% of the pupils will be at about Level 6.

To be regarded as having mastered a level, pupils will have to answer correctly 75% of all test items up through that level.

Procedures

Program

Mathematics was first taught in the pupils' mother tongue. Some concepts were then retaught in their second language. In both instances, the SRA Mathematics Series in both languages were used. The procedure was similar for the second- and third-grade classes, except that the third-grade pupils had greater contact with their second language (about 25% of the time). Oral testing in mathematics in both languages was conducted as part of the Log Study (See Study 5). In this assessment, the pupils were tested in their first language.

Evaluation

Instrument. The arithmetic test used in assessing these objectives had three parts, which are itemized in the Results of this report. The first two parts examine pupil performance through Level 7 of the Philadelphia curriculum and were used during the 1970-1971 school year with second-grade pupils. The third part, containing items from Levels 8 and 9 (review), was developed this year. Second-grade pupils were tested on the first two parts, third-grade pupils on all three parts. The tests were developed by the teachers and program supervisors who reviewed the arithmetic text and the Philadelphia curriculum guide and constructed relevant items in the same manner as last year.

Method. All tests were administered by the classroom teachers to pupils in their classes. Anglo and Latino pupils received test copies with instructions in their mother tongues. Teachers administered the three parts at their convenience over a three-day period. All tests were administered during May, 1972.

Subjects. All pupils in the class were to be tested. However, there was not time for individual testing of pupils who were absent. The percentages of enrolled pupils who were tested at each level were as follows:

Model A	
Second-grade Anglos	84%
Second-grade Latinos	73%
Third-grade Anglos	90%
Third-grade Latinos	71%
Model B	
Second-grade Latinos	82%

As the teaching of arithmetic to Model A Anglos was not under project control, they were not tested as part of this evaluation.

Analysis. The performances of various pupil groups were compared with the levels specified in the objectives. Item analyses consisting of point-biserial correlation of the pupils' success on the item with their total test scores, Kuder-Richardson 20 reliability, and the percentage of pupils succeeding with each item were computed for second- and third-grade pupils' tests.

Results

Table 10.1 shows the results of the item analyses. Overall results were as expected. Correlation of all items but two (in the third-grade results) with total score are significant at the .05 level (i.e., all are above .15 in the second-grade data and .17 in the third-grade data). The Kuder-Richardson reliabilities are satisfactory--.86 and .93 for the two test groups. Examination of the percentages of pupils with correct answers shows a common pattern throughout both test versions: addition and multiplication items which require carrying, subtraction requiring borrowing, and division with remainders proved most difficult for pupils. This suggests that many pupils have difficulty working with the concept of place value and with uneven outcomes in division.

Table 10.1 Item Analysis of the Criterion-Referent Arithmetic Test

	Second Grade (N = 144)		Third Grade (N = 123)	
Test Item	Percentage of Pupils Answering Correctly	Point-Biserial Correlation with Total Score	Percentage of Pupils Answering Correctly	Point-Biserial Correlation with Total Score
Part I				
1. $\begin{array}{r}1\\ \underline{+5}\end{array}$	96.5	.416	97.6	.237
2 $\begin{array}{r}2\\ \underline{+9}\end{array}$	89.6	.394	94.3	.253
3. $\begin{array}{r}20\\ \underline{+\ 6}\end{array}$	87.5	.416	86.2	.404
4. $\begin{array}{r}38\\ \underline{+\ 4}\end{array}$	43.2	.435	79.7	.522
5. $\begin{array}{r}42\\ \underline{+28}\end{array}$	36.1	.597	59.3	.569

Table 10.1 (Continued)

6.	26 7 84 +65	16.0	.499	39.8	.520
7.	14 15 +18	20.1	.370	62.6	.672
8.	4+3=	78.5	.173	86.2	.503
9.	9 -4	76.4	.413	88.6	.456
10.	45 -3	45.1	.497	64.2	.632
11.	37 -21	43.1	.519	69.9	.536
12.	90 -45	8.3	.237	32.5	.619
13.	65 -32	43.1	.543	72.4	.538
14.	100 -64	12.5	.560	19.5	.464
15.	138 -69	6.3	.423	19.5	.514
Part II					
16.	Time = 8:30	48.6	.575	56.9	.638
17.	Time = 3:00	79.2	.381	93.5	.209

Table 10.1 (Continued)

18. $\begin{array}{r}7\\ \text{x}6\\ \hline\end{array}$	16.7	.443	50.4	.648
19. $\begin{array}{r}5\\ \text{x}6\\ \hline\end{array}$	20.1	.518	53.7	.644
20. $\begin{array}{r}4\\ \text{x}8\\ \hline\end{array}$	21.5	.525	53.7	.659
21. $8\overline{)16}$	20.8	.539	51.2	.700
22. $7\overline{)7}$	29.2	.562	49.6	.590
23. $6\overline{)36}$	17.4	.553	52.8	.587
24. Color 1/2 of rectangle	95.1	.181	91.1	.069
25. Color 1/2 of triangle	90.3	.333	92.7	.128
26. Color 1/3 of circles	83.3	.147	81.3	.306
27. Color 1/3 of rectangle	81.9	.405	93.5	.190
28. Label parts of rectangle divided into three	64.6	.344	36.6	.487
29. Label parts of a circle divided in two	51.4	.534	60.2	.361

Table 10.1 (Continued)

Part III (Third Grade Only)

30. Write the Roman Number 2	63.4	.452
31. Write the Roman Number 5	60.2	.497
32. Write the Roman Number 16	43.1	.464
33. 16 x3	37.4	.555
34. 23 x4	4.1	.389
35. $5\overline{)46}$	7.3	.265
36. $7\overline{)30}$	6.5	.273
37. 35 +27	52.8	.616
38. 23 +40	68.3	.583
39. 267 +132	67.5	.511
40. 518 -365	28.5	.524

Summary

Item	Second Grade	Third Grade
Number of Items	29	40
Mean Number of Items Correct	14.35	23.79
Standard Deviation	5.27	8.45
Kuder-Richardson 20 Reliability	0.86	0.92
Standard Error of Measurement	2.00	2.37

Results in Table 10.2 show that the relationship between project goals and pupil performance was different for the subgroups in the Model School Programs. In three subgroups (Latino Model A Second Grade, Anglo Model A Third Grade, and Latino Model A Third Grade) pupil performance was more spread-out than anticipated by project planners when they wrote the objective. Some students were found performing better than the objective specified; others (16% of the second-grade Model A Latinos, 22% of the third-grade Model A Anglos, and 9% of the third-grade Model A Latinos) were performing less well than the minimum specified in the objective. Latino second-grade Model B pupils were at or above the minimum levels expected (nearly one-third scored higher than anticipated in the objective). Model A Anglo second-grade pupil performance was close to the levels anticipated, the main discrepancy being that 24% of the pupils who were at level four should have been at level five.

Discussion

Taken as a whole, the results of this year show that the exhibited pupil performance was close to overall expectation, but there was a tendency for some groups of pupils to be more heterogeneous than was anticipated. This outcome was similar to that found during the second operational year. However, to focus upon this outcome would be to ignore the findings of the item analyses which might provide greatest usefulness in improving the teaching in the programs. These item analyses showed that pupil difficulties are localized, especially in the area of understanding operations involving place value, borrowing, and carrying. Review of the item-by-item tally of pupil success in the previous evaluation (Offenberg, 1970) shows that similar difficulty may have been reflected in the previous year's results.

In other parts of the Philadelphia school system, uneven rates of mathematics-skill growth has lead to the development of the Continuous Progress Primary Arithmetic Levels, which guided planners in the statement of objectives for this program. In specifying the levels, it was found that operations involving place value were among the most difficult concepts for pupils to master. Thus the skills which were most difficult for Model School program children to master were also the ones which were difficult for pupils in the Philadelphia schools in general. A special emphasis on materials and teaching procedures to improve mastery of these concepts is clearly indicated in the Bilingual Program as well as in the entire Philadelphia School District.

Table 10.2. Results of Administration of the Criterion-Referent Arithmetic Test (Cumulative Percentages)

Level	Minimum Score for Mastery of Level	Second Grade									Third Grade						
		Expected Results	Actual Results								Expected Results	Actual Results					
			Model A Anglo		Model A Latino		Model B Latino		Total			Model A Anglo		Model A Latino		Total	
		%	N	%	N	%	N	%	N	%	%	N	%	N	%	N	%
8 and 9	30	0	-	-	-	-	-	-	-	-	20	15	29	20	29	35	29
7	22	0	0	0	5	8	11	32	16	11	30	34	65	41	59	75	61
6	16	30	13	27	15	24	26	76	54	38	100	41	78	57	81	98	90
5	12	90	28	57	38	62	30	88	96	66	100	48	92	66	94	114	93
4	6	100	49	100	54	84	34	100	137	95	100	52	100	69	99	121	99
Below 4	0	100	49	100	61	100	34	100	144	100	100	52	100	70	100	122	100

Study 11. EXPLORATORY TESTING OF "ARRIBA" JUNIOR HIGH SCHOOL STUDENTS

At the middle of the third operational year it became apparent to project management that testing of ARRIBA pupils on norm-referent measures, especially in reading in Spanish and English, would be useful for project planning and curriculum development. If the testing were undertaken, it would clarify the skill levels which could be demanded by materials prepared for use in the project. Specifically, it would answer the question, "To what extent can written materials be prepared for students to read in English and for students to read in Spanish?" As the greatest investment in curriculum-materials development of the ARRIBA program has been and continues to be for the junior high school, it was decided to test pupils at that level.

An unpublished study conducted in 1965 by the Office of Research (Desing, 1969) fortuitously provided base-line data regarding reading skills in Spanish. In that study, all Philadelphia pupils who were Spanish-speaking were examined. Junior high school pupils were examined with the Inter-American Test Level 4, CEs, which measures reading skills. The 1965 results of this test served as a base line against which current pupil performance in the program was compared. This base line enabled the evaluation to provide both a description of pupil performance in the program, and a clear way of determining what impact the Bilingual Program has had on pupil performance.

The ARRIBA pupils also were examined with a variety of levels of the Iowa Tests of Basic Skills. Although this test is used systemwide, Spanish-speaking pupils who did not (in their teachers' opinions) know enough English to be tested were excluded in past administrations. Thus pupils most like those served by the ARRIBA program were excluded from previous administrations of this instrument. As a result, there is no reasonable base line against which the performance of ARRIBA junior high school pupils could be compared on this instrument.

Procedures

Program

The performance of pupils on the standardized tests cannot be attributed directly to any elements in the program because it is the result of the cumulative impact of (a) the instruction pupils received in the Philadelphia schools before they entered in the Bilingual Program, (b) the instruction pupils were receiving in their mother culture before coming to Philadelphia, (c) any previous experience students may have had in the Bilingual Program, and (d) the experiences that pupils had during the year in which the testing was conducted. Of these, information exists only for the last two elements. If a pupil had received instruction in the ARRIBA elementary grades (seventh graders one year ago, eighth graders two years ago), reading in Spanish was a distinct subject in the program (with Laidlaw readers in common use). The "English as a Second Language" program in the elementary grades introduces pupils to reading after adequate oral-aural control is developed. The reading elements are based primarily on the English as a Second Language texts and materials chosen by the teacher, with some supplementary use of regular English-language readers when pupils become ready for them. In the junior high school, reading and other language-arts skills are integrated in the "Spanish as a First Language" and "English as a Second Language" curricula.

In addition to language and reading skills, the Iowa Tests of Basic Skills (ITBS) include a mathematics subtest and a study-skills subtest. The instruction in mathematics and social studies, where most of the study skills would be taught, has been primarily in Spanish; the test, of course, is in English, and is verbal in its orientation. Thus, for the target group of this study, the ITBS mathematics subtest and study-skills subtest performance must be regarded as amalgams of (a) pupils understanding of concepts and (b) use of the English language.

Evaluation

Instruments. The assessment of Spanish reading skills was made through administration of the Inter-American Test of Reading, available in Spanish and English versions. The Spanish version for the junior high school (Level 4, Form CEs) was administered. It provides four scores: Vocabulary, Level of Comprehension, Speed of Comprehension, and Composite. Norms for the tests are based on an Islandwide sampling of pupils in Puerto Rican schools.

The Iowa Tests of Basic Skills (Form 3) were used to test pupil performance in the English language. As out-of-level testing is in common use in the Philadelphia schools and as ARRIBA pupils were selected because they were Spanish-dominant, a different testing program was conducted at each school site. It had been planned that pupils at both schools would be tested with the form for one grade level below their actual grade. However, one school's testing supervisor felt that it would be desirable to administer lower level tests because he was sure those originally specified by the evaluator were too dificult. Therefore, at Penn Treaty Junior High School, the fourth-grade test was used with the seventh-grade pupils, and the sixth-grade test was used with eighth-grade pupils; at Stoddart-Fleisher Junior High School, the sixth-grade test was used with seventh-grade pupils, and the seventh-grade test was used with eighth-grade pupils. As this testing was conducted as part of the regular School District testing program, ninth-grade pupils, who do not participate in the School District testing, were not examined.

The Iowa tests yield six scores--Vocabulary, Reading, Language Use (spelling, capitalization, punctuation, and usage), Work-Study Skills (map reading, graph and table reading, use of reference materials), arithmetic, and Composite.

Method. The Iowa Tests of Basic Skills were administered to pupils in their classrooms by classroom teachers, in accordance with the procedures used elsewhere in the School District, during the last week of April and the first week in May. The Inter-American Test of Reading was administered by a member of the research staff over a two-day period during the middle of May.

Subjects. All 107 seventh- and eighth-grade ARRIBA pupils on roll in March were potential subjects for the Iowa tests; 87 pupils (81%) were tested. All 158 pupils in the seventh, eighth, and ninth grades were potential subjects for the Inter-American tests; 124 (78%) completed the tests. The actual number of pupils tested was dependent upon those attending school on the days when the tests were administered.

Analysis. With the Iowa Test, the lack of clear-cut base lines and the variety of forms used prevented any analysis beyond the presentation of descriptive statistics (means and standard deviations) which were computed for each test level and treatment group.

With the Inter-American test, the uniformity of test form and the existence of a base line permitted comparison of program-pupil performance with the (preprogram) 1968 base line (seventh- and eighth-grade students). An analysis of variance on the composite scores was computed to test the statistical significance of the observed differences. Descriptive statistics also were computed for these grade levels and for the ninth grade as well.

Results

Iowa Tests

The performance of seventh graders on the Iowa tests is shown in Table 11.1. It presents an ambiguous picture. Results were uniform within the four pupil groups in that the grade equivalent earned was similar on all subtests, without large descrepancies among Vocabulary, Reading, Language, and Work Study Skills. Seventh graders (at Penn Treaty) whose performance was assessed with Level B (the fourth-grade test) had a Composite grade equivalent of 2.8, with all of the subtests in the narrow range from 2.4 (Vocabulary) to 3.0 (Work-Study Skills). For Vocabulary and Reading, where the guessing scores are easy to compute (because every item has four responses), a pupil who had guessed at every item could have grade-equivalent scores of 2.6 and 3.0, suggesting that actual pupil performance--2.4 and 2.7--was similar to that obtainable from guessing at every test question.

Seventh-grade pupils (at Stoddart-Fleisher) were examined with Level D (the sixth-grade test). Pupils'grade-equivalent Composite scores averaged 4.9, with subtest scores ranging from 4.3 (Language) to 5.1 (Vocabulary). The guessing level is 4.1 for Vocabulary and 4.0 for Reading, suggesting that the actual pupil performance--5.1 and 4.8--was only slightly above that of chance; pupils answered correctly only two to four questions more than pure chance would have allowed.

Eighth-grade pupils who were tested with Level D (at Penn Treaty) did not perform quite so well as the seventh graders who took the same test. The mean Composite score was 4.1, and subtest scores ranged from 4.2 (Arithmetic) to 3.5 (Language). Comparisons of the Vocabulary and Reading scores with chance levels described above suggest that pupil performance was at about chance levels.

Table 11.1. ARRIBA Junior High School Pupil Performance on the Iowa Tests of Basic Skills.

Group & Statistic	Vocabulary	Reading	Language	Work-Study	Arithmetic	Composite
Grade 7 Level B						
Mean G.E.	2.39	2.66	2.70	3.04	2.92	2.78
No. of Students	25	25	23	25	27	23
Stand. Dev.	.66	.85	.71	.90	1.07	.68
Test Floor (zero)	1.3	1.3	1.3	1.4	1.4	--
Grade 7 Level D						
Mean G.E.	5.09	4.84	4.27	4.56	4.91	4.88
No. of Students	16	16	14	17	16	14
Stand. Dev.	1.12	.89	.68	.69	1.27	.74
Test Floor	2.1	2.2	2.0	2.3	2.4	--
Grade 8 Level D						
Mean G.E.	3.98	3.96	3.52	4.19	4.58	4.07
No. of Students	29	29	28	26	26	24
Stand. Dev.	.86	.76	.40	.89	1.07	.59
Test Floor	2.1	2.2	2.0	2.3	2.4	--
Grade 8 Level E						
Mean G.E.	4.35	3.83	4.28	4.64	5.17	4.48
No. of Students	16	16	15	15	16	15
Stand. Dev.	.95	1.46	.94	.78	.8	7
Test Floor	2.6	2.6	2.4	2.7	2.9	--

Eighth-grade pupils who were tested using Level E (the seventh-grade test) had a mean Composite Grade-Equivalent score of 4.5, with individual tests ranging from 5.2 (Arithmetic) to 3.8 (Reading). Chance score for pupils who answered every question on the Vocabulary subtest is 5.0, which is above the score earned (4.4). Chance score on the Reading subtest is 4.8, which is also above the 3.8 score earned.

Inter-American Reading Test (Spanish)

Results of administration of the Inter-American test and comparisons with base line are shown in Table 11.2. Pupil performance in the ARRIBA seventh and eighth grades was better than could be expected from guessing and was statistically significantly greater than that of the base-line group. The base-line group was at the 8th and 9th percentiles while pupils in the ARRIBA program were at the 25th and 29th percentiles. The analysis of variance shows that the difference in performance between the program and base-line groups would occur by chance less than one time per thousand. The analysis

Table 11.2. Results of Testing Pupils on the Inter-American Test of Reading, Level 4, Form CEs.

	N	x	Percentile Rank in Puerto Rican Norms	SD
Base Line				
7th Grade	98	20.1	9	12.3
8th Grade	82	24.1	8	14.3
Program				
7th Grade	41	26.7	25	12.3
8th Grade	46	33.5	29	17.6

Analysis of Variance (Raw Scores)

Source	MS	df	F	P
Grade	1937.0	1	9.68	<.01
Program	3787.8	1	18.93	<.001
Interaction	115.1	1	0.57	NS
Error	200.0	263	--	--

also showed that the test was successful in discriminating grade level. Although there was no baseline with which to compare results, 37 ninth-grade students also were tested. Their mean score was 28.51 (9th percentile), with a standard deviation of 11.19.

Discussion

The data gathered using the Iowa test suggest that pupil performance in English in the ARRIBA program cannot be reliably assessed by any of the levels of this instrument tried in this study. The fact that pupils' scores hover near the guessing level over the entire administration suggests that performance will not be reliably measured by this instrument. Therefore, it is felt that formal testing of academic performance in the English language would probably be served best by (a) instruments designed to measure specific skills taught in that language (i.e., criterion-referent) or (b) instruments designed especially for use with non-English speakers first learning English.

Results of the Inter-American Test of Reading in Spanish are more encouraging, although not without some ambiguities. The test administered was, first, the one designed for the grade level of the participants, thus eliminating the need for use of grade equivalents as descriptors and permitting pupil performance to be described in terms of percentile rank.

The analyses of variance of seventh- and eighth-grade scores showed that test scores in the program were beyond chance levels, and that the test could clearly discriminate maturation of pupils in the seventh and eighth grades as well as detect differences in Spanish reading skills brought about by the Bilingual Program at these levels. The disappointing aspect of the Inter-American test data is in the performance of the ninth-grade students. In terms of raw score their performance was slightly less than that of eighth graders; in terms of percentile rank, they fell behind the other grade-level groups in the program.

These results seem to suggest that the Bilingual Program was clearly effective in helping seventh- and eighth-grade Latino students grow in their mother tongue, but at the ninth grade that growth seemed to stop.

This study was conducted, in part, in order to see the type of reading levels in English and Spanish that curriculum developers could anticipate. The English-language testing does not lead to a clear answer. The Spanish testing does show that if it is kept fairly simple, most ARRIBA junior high students should be able to handle reading material designed for seventh- and eighth-grade students whose performance is in the 25th-to-30th-percentile range on norms for Puerto Rico.

STUDY 12. REPLICATION OF FINDINGS ASSESSING THE "ARRIBA" COMPONENT'S IMPACT ON ELEMENTARY SCHOOL PUPILS' ATTENDANCE AND HIGH SCHOOL PUPILS' DROPOUT RATE

Studies conducted during the first two years of project operation examined pupils' grades, behavior ratings, attendance, lateness, and dropout rates. This was done in two ways. During the program's first year pupils' behaviors were compared to their own behaviors the previous year. This analysis had the potential to provide misleading data because it left uncontrolled both changes in the variables examined due to maturation of the students and statistical regression effects which might have arisen due to the selection, i.e., the inclination of school personnel to recommend for enrollment in the bilingual program Spanish speaking students who had performed poorly in regular classes the year before. During the second year the analysis was modified in that program participants were compared with other students who had been enrolled in the same grade in regular classes in the Spring of 1969, the year prior to the inception of the program. This method eliminated biases which might be associated with differences in grade level (or maturation) but generated a bias of its own: as the project evaluators did not have much information about the base-line group, students selected for it were chosen on the basis of their mother tongue, as listed in SKYDAS, the School District's pupil-information system. In many cases, these listings were based on pupil birthplace or pupil surname, and therefore contained more students who were competent in English than did the ARRIBA program. As a result, the second-year base line might have been biased in that the control population might have been academically better than those pupils enrolled in the Bilingual Program's ARRIBA component. Grades and behavior ratings in the program were found to be superior to both base line groups used for comparison in the first and second years. This outcome suggested that grade and behavior-rating results are probably real, consistent outcomes of the program. Detailed examination of them is, therefore, no longer necessary in every year's evaluation. Similarly, it was found that lateness was never different in the program and base-line groups; that finding did not warrant yearly replication.

During the second year's evaluation it was found that the attendance of elementary school pupils in the program was better than that of the base-line group, and that the dropout incidence among high school pupils in the program was significantly below that of the base-line group. These results were considered very important because, unlike grades and behavior ratings, they were free of teacher-opinion biases. This, and the fact that they were not obtained in the first year's evaluation, made them worthy of replication in the third operational year. They also represent two of the major objectives of the bilingual program:

. Participation in the ARRIBA component will reduce significantly the amount of pupil absenteeism. (This objective was assessed for the elementary school level.)

. Participation at the high school level of the ARRIBA program will reduce the frequency with which pupils drop out of schools. (This objective was assessed for the senior high school level.)

As the study conducted during the second year of program operation was the more conservative of the two assessments of these objectives, it was decided that replication of the methodology used at that time would be the most conservative way of reaffirming the program's effectiveness. As the effectiveness of the program in improving grades was already clear, it was decided that that study did not need to be replicated.

Program

The ARRIBA program served pupils in Grades 3 through 12. The program was geared to pupils whose competence in at least oral Spanish was great, due to their having been either native speakers of the language or children of households where the parents were native speakers of the language. The program included academic courses and some high-school-level commercial courses in the Spanish language, as well as English as a Second Language. Elementary school pupils and junior high school students in the program were enrolled in the entire package of courses. High school pupils could, with the guidance of their counselor, select any courses offered by the program and could choose a combination of program classes and English-language courses.

At the one elementary school, separate classes were operated for each grade level. At the second elementary school, pupils in the ARRIBA component received instruction in an ungraded classroom. At the junior and senior high school levels, pupils followed a prescribed weekly program, moving from teacher to teacher for the various subjects.

Evaluation

Sample. Two samples of pupils were involved in this study, one at the elementary level and one at the senior high school level. As attendance data were available for virtually every pupil at the elementary level, a random sample of 25 pupils was drawn from those who had been on roll in the program since October, 1971, and were still on roll at the end of the third quarter. The number of days of absence and the percentage of attendance were computed for each pupil.

As dropout incidence is a relatively low base-rate phenomenon, all pupils enrolled in the ARRIBA high school component prior to October were drawn for the assessment of the ability of the program to keep high school students in school.

The base-line groups against which these samples were compared were developed last year and consisted of a 20% sample of all pupils who were classed as Spanish-speaking in 1968. Elementary school and senior high school subsamples were used in this study. A detailed description of the generation of the base-line group was included in the 1970-1971 evaluation report.

Procedure. Attendance data were obtained for the third quarter of the school year by selecting pupils from the project who had been on roll prior to the end of October 1971 and checking the attendance record of each one. Dropout data were obtained by visiting the teachers of each of the pupils listed in the pupil-information file as of October 1971. The teachers' roll books were examined to see whether the pupil had been dropped from the class roster. If he had, the school office was contacted to see whether the pupil had transferred, dropped out, or moved.

Analysis. For last year's evaluation, preprogram base-line data on Spanish-speaking pupils were obtained. During the 1971-1972 school year, the parallel data were obtained, permitting analysis of variance or chi-square to be computed.

Results

Table 12.1 ARRIBA Elementary School Program Attendance (First Three Quarters of School Year).

Item	1972-Current (N=25)	1968-Base-line Group (N=77)
Mean Percentage of Absence	10.5%	13.8%

Analysis of Variance

Source	MS	df	F	P
Between Groups	205.4	1	1.7	NS
Within Groups	119.6	100	--	--

Elementary School Attendance

Table 1 shows the results of the comparison of ARRIBA elementary school pupils' attendance for the 1971-1972 school year with that of the base-line group. The ARRIBA students were absent an average of 3.3 percentage points less than the base-line students--a reduction of about one-fifth. This was not a statistically significant improvement over the base-line group. (In the second year of the program, absenteeism was 7.2%--a statistically significant change from the base-line absenteeism.

High School Dropouts

Table 12.2 shows the number of pupils on roll prior to October 31, by grade level, and the number of pupils who dropped out of school between October and March. The table also shows similar data for the 1969 base-line group of Spanish-speaking pupils enrolled at the same schools.

Table 12.2 Comparison of 1971-1972 Dropout Incidence in the High School ARRIBA Component with the 1969 Base-line Group (October-to-March Interval).

Group	Statistic	Grade 10	Grade 11	Grade 12	Grade Unknown	Total
ARRIBA Pupils Known to be on Roll Prior to October 31	Total N	108	68	27	--	203
	Dropout N	4	5	0	--	9
	Dropout %	3.7	7.4	--	--	4.4
ARRIBA Pupils Believed to be on Roll Prior to October 31*	Total N	153	95	34	16	298
	Dropout N	13	9	4	1	25
	Dropout %	8.5	9.5	8.8	6.2	8.4
Preprogram Base-line Group	Total N	143	88	65	--	296
	Dropout N	36	20	4	--	60
	Dropout %	25.1	22.7	6.2	--	20.0
Chi-Square (df=1) ("Believed" Group vs. Base-line Group)		13.7 (<.01)	14.4 (<.01)	0.2 (NS)	--	--

*Due to the large amount of missing data, the exact time when 95 pupils entered the ARRIBA component is not known. It is known that they were in the program before December, 1971. Since most of these probably were enrolled in the program in October, they are included in this "believed to be on roll" group.

Two sets of figures are shown. Those for pupils who were listed as program participants prior to the beginning of the October interval are shown first. There were also 55 pupils whose program admission dates were not available but who were participating by December. Most of these were in the program prior to October, but it was not known how many were admitted after this date. The results for the "known" group and the "no admission date" group are combined in the second set of data on the table, "pupils believed on roll." As the dropout incidence was higher in this combined group, the conservative approach was adopted, and the comparisons with the base line were made with the pupils believed on roll by October 31.

Examination of Table 12.2 confirms the findings of the 1970-1971 school year: during the October-March interval the dropout incidence of the tenth-grade pupils was about one-third that of the base-line group; that of eleventh graders was slightly less than half that of the base-line group; among twelfth-grade pupils, it was virtually the same as in the base-line group.

Discussion

The findings of this study clearly demonstrate the effectiveness of the ARRIBA component in preventing dropouts at the high school level. The study of absenteeism at the elementary level is not clear: while attendance in the observed sample was better than in the base-line group, unlike the results from the second operational year, it was not sufficiently different to rule out chance.

During the second operational year, absenteeism had fallen to 7.2%, compared with the current year's 10.8%. Both findings suggest that more sophisticated studies are desirable.

The dropout results show that on an October-to-March basis the program consistently helps to retain students in the schools. Unknown is the extent to which the program helps the retention of pupils on a long-term basis. Specifically, what percentage of a cohort of pupils who have been served by the program in the 10th grade will actually complete school and receive diplomas? Of those who do complete school, are there differences in pupils who have participated in project during their 11th- and 12th grade experiences, and those pupils who have moved into regular English-language classes? This kind of long-range study would demonstrate project effectiveness in the most socially meaningful way. It is, however, a complex and expensive undertaking because of the difficulty of following individuals and appropriate comparison groups through several years of school experience.

The elementary school attendance study requires follow up because the consistency of the trend suggests that follow-up of a larger sample may be necessary to provide a clear-cut assessment. It may also be necessary to control family background, grade level, and length of experience in the program, if unequivocal results are to be obtained.

In both areas, a policy decision needs to be made regarding utilization of evaluation resources: how much is to be spent to better establish the effectiveness of the program in the areas of attendance and school retention given the overall aims of the program.

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